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FROM

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HARRY AND LUCY,

WITH

OTHER STORIES,

by

MARIA EDGEWORTH.

IN TWO VOLUMES

VOL. II.



He went forward, and looking through the key-hole, began to laugh.

Page 85

NEW YORK.
Harper & Brothers.
1836.

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Drawn by W. Page. A. Dick sc.

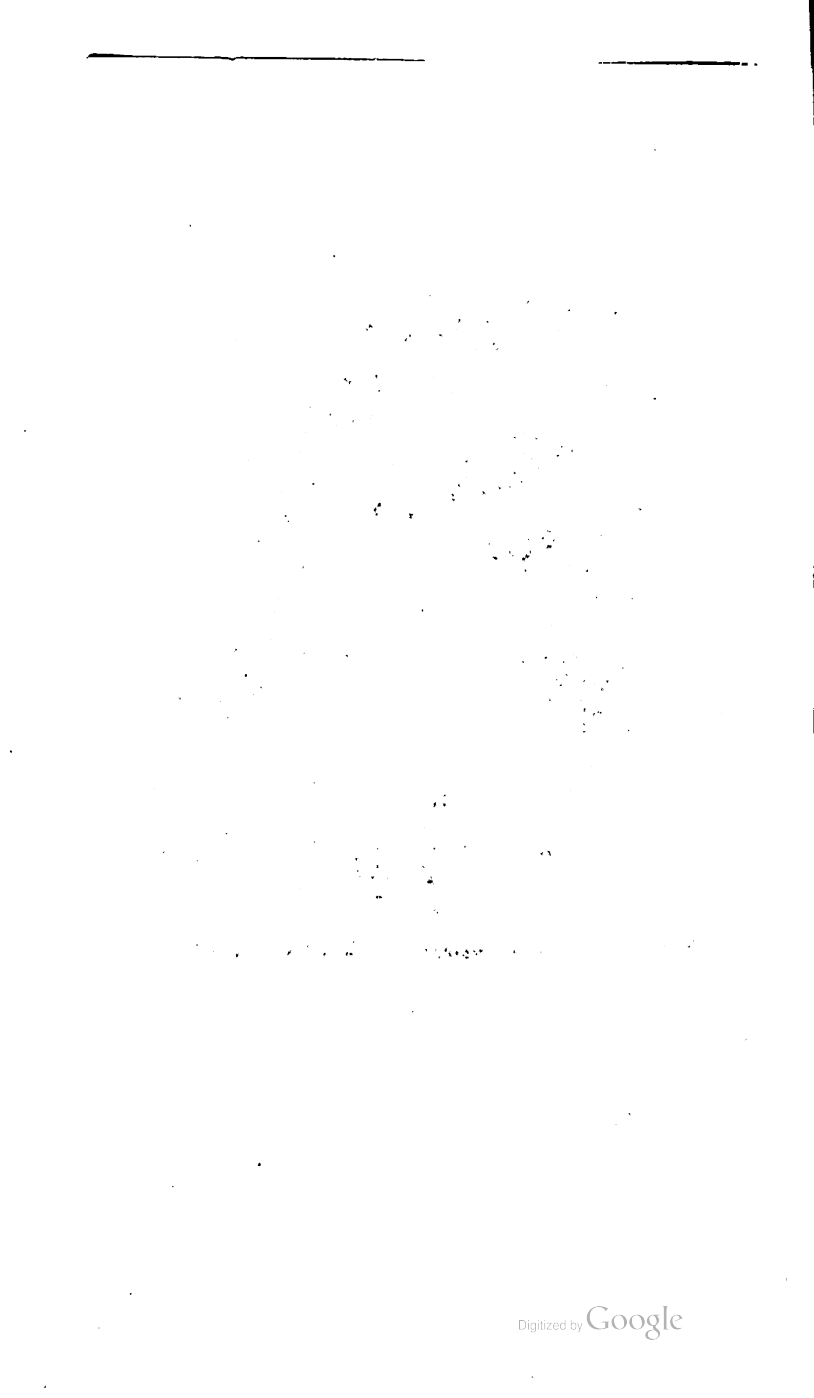
Harry rescues the child of dame Peatons from the flames.

Page 208.

New York. Harper & Brothers. 1836.

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NEW-YORK:

PUBLISHED BY HARPER & BROTHERS,
NO. 82 CLIFF-STREET.

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HARRY AND LUCY.

[CONCLUDED.]

On the evening of the last day of their journey, Harry and Lucy looked out anxiously at every house they saw; and many times they hoped that cottages, which at a distance peeping between trees looked charming, would be theirs, till, on a nearer view, they were as often contented to let them pass. One with a honeysuckle porch, and another with a trellis, and another with a pomegranate in full flower. Lucy, however, looked back with regret, fearing that theirs could never be so pretty. Theirs was to be on the seashore, but as yet they did not seem to be near the sea. Presently they turned into a lane, which led down a steep hill, with hedges so high on each side that nothing could be seen but the narrow road before them. At the bottom of this lane, to the right, there was a gate, and a road leading through a wood. Harry's father stopped the carriage, and asked an old woman who came to the gate, "Is this the road to Rupert's cottage?"

"Yes, sir."

"I am glad of it," thought Harry. "We are sure of a wood, that is one good thing."

The gate opened, and they drove in.

"Now we shall see what sort of a place it is," said Lucy.

Rupert's cottage was at the foot of a high hill covered with trees, which sheltered it at the back. In front was a very small green lawn, surrounded with evergreens. The cottage had a honeysuckle porch, and a bow window, and a trellis. The outside was all that Lucy desired: and within—within it was an odd kind of house, with one long matted passage, and steps up here and down there, and rooms that had been enlarged, with jutting windows, and niches, and nooks, in curious ways; and Lucy liked it all the better for not being a *regular* house. The rooms in which she and Harry

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were to sleep, if rooms they could be called, were "very, very small," as even Lucy observed; there was but just space for a little bed, and a little table, and a little chair, and for a little person to turn about in. No chest of drawers, or any such luxury, only a press in the corner cut in the wall. But the more difficulties, the more inconveniences, the better; there would be more work for ingenuity in contriving how to settle themselves and their goods. Lucy wanted to have the trunks brought in, and to go to the unpacking and arranging directly; but Harry had other thoughts in his head.

"Lucy," said he, "I am disappointed in one thing, and a great thing."

"What, my dear Harry!" said Lucy, opening her eyes wide.

"The sea," said Harry, looking out of the window. "No view of the sea anywhere. I thought the cottage was to be on the seashore."

And so it was, but the sea was hidden from the view of the windows of the house by a sandbank, which had been thrown up by the tide, and which was now covered by a plantation of evergreens. Harry persuaded Lucy to put off unpacking their trunk till morning, and to go out with him in search of the sea. He led the way, and as they went round the little lawn, she, delighted with the new place, and with every new flower and shrub, would have often stopped to admire. "Oh, Harry, look at this myrtle, taller than I am! Oh, Harry, this myrtle, taller than mamma!"

Harry looked back, but ran on to find the way down to the seashore. "This is the way, this is the way!" he shouted joyously to Lucy, bidding her "Follow! follow! follow!"

But suddenly he stopped, and was silent, struck by the first sight of the ocean. Lucy followed, and turning abruptly the corner of the rock which had hid the view from her, exclaimed, "The sea! the sea!"

She stood for some moments in silence, beside her brother, looking at the vast extent of water, far as her sight could reach, bounded only by the sky. They were now standing on the sands of the shore. It was a still evening, the tide was ebbing, the sun setting, and there was a long bright light upon the water; while the green and white waves, curling gently over each other, moved on continually.

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"How beautiful it is!" exclaimed Lucy. "How grand! Harry, is not it more beautiful and grander than you expected? Is not it, Harry?"

"Infinitely," said Harry. "But hush, I want to look, and to listen to it."

Lucy stood beside her brother a little while longer, and then ran back to the house to call her mother to look at it, before the red sun should be quite set. Her mother came, and they found Harry still on the same spot, fixed in admiration. His mother seemed to know what he felt and thought, and to sympathize with him just as he wished. At first in silence, then expressing for him in words that for which he could not find utterance—the ideas of boundless extent, duration, power; the feelings of admiration, astonishment, and awe, which create the sense of the sublime. While his soul was under this strong impression, his mother seized the proper moment to raise his thoughts still higher, from the ideas of immeasurable extent, duration, and power, to that Power by which the ocean, the sun, the earth, and we ourselves, were created, and are preserved.

The impression made on the minds of Harry and Lucy was never effaced.

By sunrise next morning Harry was on the seashore. At the stated hours he was constantly there to watch the coming in and going out of the tide. This regular ebbing and flowing of the sea excited such astonishment in his mind, that it seemed insatiable. A fisherman, who lived by the seaside, asked him if he had never before heard of the coming in and going out of the tide every day.

"Yes, I had *heard* of it, but I never *saw* it before," said Harry. That was quite another thing.

The sea and the tides took such possession of his imagination that he could think of nothing else, not even of steamboats or steam-engines. During the first day he did not even think of crossing the sea in a steam-vessel: he was completely absorbed in viewing this great spectacle of nature, and considering its wonderful phenomena.

His mother was surprised to find that he was susceptible of this kind of enthusiasm, of which she had not till now seen in him any symptom. All his enthusiasm had seemed to be for mechanics; his mind had,

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indeed, opened during his travels to other objects; but still these had been introduced, or had interested him, by their connexion with the steam-engine, to which he had traced every thing good or great. So that, as she had once told his father, she was afraid that Harry's head would be quite turned by his dear steam-engine, or at best that it would leave no room in his imagination for the beauties of nature, or for any thing else. But his father had answered that there was no danger in letting the boy's enthusiasm take its course, especially as it was a means of collecting all the knowledge he could upon one subject. His father said it was of little consequence to which science he first turned his attention; the same thirst for knowledge, when satisfied on one point, would turn to new objects. The boy who was capable of feeling such admiration for the ingenious works of art, could not fail, as he thought, to admire with still greater enthusiasm the beauties of nature. He would have probably disliked them if they had been pressed upon his attention, and yet he would have felt pain from not being able to sympathize with the admiration of his friends. His father was justified in his opinion, and his mother was now quite satisfied.

But on the evening of the day after their arrival, Lucy came to Harry with no face of rejoicing.

"Oh! my dear Harry, here you are standing on the seashore, looking at the tide very happily; but you do not know what a misfortune has happened to you."

"What misfortune can have happened to me without my knowing it?" said Harry.

"I have been unpacking our trunk," said Lucy.

"The glass of my camera-obscura is broken, I suppose," said Harry.

"You *suppose*, so calmly!" cried Lucy.

"Perhaps it can be mended," said Harry.

"Impossible!" said Lucy: "come and look at it, my dear Harry, it is broken into a hundred pieces."

"Then there is no use in looking at the hundred pieces," said Harry.

"But if you will come in and look at it," said Lucy, "I can show you just how it happened."

"I cannot help it now," said Harry, "so it does not much signify to me how it happened. I will look at it when I go in, but I want to stay here just to see how high the waves come at full tide."

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"I am glad your head is so full of the tide, Harry," said Lucy; "I was afraid that you would be excessively vexed, as I was when I opened the box and saw it. Besides, I was afraid that you would think it was my fault."

"No, I could not be so unjust," said Harry. "I remember how carefully you packed it, and how good-natured you were about it; and I do not forget your shell-box, which you left at home to make room for my camera-obscura. Now I am sorry you did not bring it."

"I can do without it," said Lucy.

"I will make a shell-box for you," cried Harry; "and I know how I can make it, out of that camera-obscura of mine, and without spoiling it, even if I should get a new glass. I will go in and look at it, and begin directly," said Harry. "I mean, as soon as ever I have seen the tide come in, and marked how high it comes up on this rock."

Withinside of the box of Harry's camera-obscura there was a set of hinged flaps, which lay at the bottom when it was not used, but which, when it was to be used as a camera-obscura, were lifted up, and, joining together, formed a sort of pyramid, on the top of which the eyeglass was fixed. This glass being broken, Harry cleared away the fragments, and took out the pins from the hinges of the flaps which formed the pyramid. Then he could take out the flaps, and these with their pins and hinges he gave into Lucy's charge, to take care of till they should be wanted again. Then, with the help of an old knife, the only tool to be had in Rupert's cottage, he cut up a blue bandbox, the only pasteboard to be had in Rupert's cottage; he carved and cut this pasteboard into a number of slips with tolerably straight edges, and these were to be fastened inside of his box at the bottom, so as to form divisions from the middle in the shape of a large star; the corners round it filled up with other divisions of hearts and crescents, with some, as Lucy described them, of no particular shape. This was the ground plan; these divisions were but half the height of the depth of the box: over this first story there was to be another; a tray was to be made to fit in, and to lie on the top of the *basement* story, as Harry would have it called. With difficulty the blue bandbox furnished sufficient pasteboard for this.

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Every scrap was required, and some parts of its rim had been so much bent, and bruised, and battered, that they could scarcely be made fit for service, with Harry's utmost care and skill. When the work was all cut out, Harry set Lucy to write numbers on the pieces of the stars, hearts, crescents, and nondescripts, that each might fit rightly into its place. This he had learned, he said, from reading the description of the building of the Eddystone lighthouse. It was a precaution he found of great use in the present work, the first of the kind he had ever attempted. He had no glue. The cook, or she who acted as cook in Rupert's cottage, had no time to make paste. Harry, however, searched in the orchard on the cherry-trees for gum, and found some, which he melted in hot water. It was too thin, so thin that it would not stick his divisions together. By his mother's advice, he melted it in vinegar, with which he made an excellent cement. Though his fingers were unused to this fiddle-faddle work, as he thought it, he persevered for Lucy's sake, and for the sake of his promise. It was difficult to make the tray fit rightly, or draw up and let down easily; but he polished away all friction at the four corners, and he fastened tapes to the middle of each of the four sides so judgmatically, that it could be drawn up without hitching, and without danger that, when filled to the brim with the smallest of sugarplum-sized shells, it should overturn or be overturned.

While Harry had been working at the shell-tray in his own little room, Lucy's head was in all the cares and joys of arranging his goods and her own after the general unpacking. It not only required nice arrangement to make things comfortable in the small space allotted to them in their new abode, but continual care would be necessary to keep them so; and now Lucy felt particularly the advantage of those habits of order which her mother had taught her, even when she was a very little girl.

"Lucy, put your work into your workbag, and put your workbag into its place," had not been said in vain.

When Lucy had arranged her own room, she stood contemplating her arrangements, and said to herself,

"What a pleasure there is in seeing all things fit nicely into their places."

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This pleasure in the perception of the fitness of things has been felt probably by every little or great lover of order, as well as by Lucy. Besides our sense of the convenience of having things in their places, and the expectation of finding them readily when wanted, we feel some self-approbation in having done our duty in putting them to rights.

Lucy, having finished to the best of her power the arrangement of all her brother's things and her own, went out to the seashore to look for shells, and numbers she found. The whole day was spent in the delightful search; and the next morning, the moment breakfast was over, she asked Harry to come again with her to the same amusement; but he said that he had business to do first, and that he would join her as soon as he had learned his lessons.

"Lessons!" repeated Lucy with surprise, not unmixed with disappointment. "Do you intend to go on with lessons, Harry?"

"Yes; why not?"

"I do not know," answered Lucy, putting on her bonnet; "but I thought you need not learn them—I did not know that we were to go on with lessons now. We are not at home."

"We are at home now, I think," said Harry. "This is to be our home for two months at least."

"That is a long time, to be sure," said Lucy, tying the strings of her bonnet, "but I have not settled to any thing yet: I have no Greek to learn, thank goodness! I will go down to the seashore, to-day at least, and you will find me there, Harry, when you have done your business: make haste."

Harry, with his books under his arm, and Lucy, with her bonnet on, and shell-tray in her hand, were turning their different ways in the matted passage, when their mother came out of her room.

"Where are you going, Lucy?"

"To the seashore, mamma, to look for shells."

Her mother said that this was a pleasant amusement, but reminded her that there were other more necessary employments.

"Yes, to-morrow, mamma, I intend—"

"Why not to-day, Lucy," said her mother.

"I thought it would not signify, mamma, if I went without lessons one day more: you know I have not

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done any during all the journey. And in one day I could not learn much."

"My dear Lucy," said her mother, "when your father and I first thought of bringing you with us on this journey, we considered whether it would be of advantage or disadvantage to you."

"Thank you, mamma, and you said yesterday that you thought it had been already of great use to Harry."

"True, my dear; but now I am speaking of you."

"Me only, mamma?" said Lucy. "When you said you, I thought you always meant both of us."

"You are not quite so steady in perseverance as your brother; and I was afraid that seeing a great number of new things, and being with a number of new people, might be of disservice to you."

"But I hope you do not think I am spoiled at all yet, mamma," said Lucy.

"I cannot tell yet, my dear," said her mother, smiling, "that remains for you to show me. Your father thought, as he told me, that I might trust to the habits of regularly employing yourself, which you have lately acquired or resumed, and to the influence of your brother's example. I shall not have it in my power to attend to you here so much as I do at home. I must ride out while I am here some hours every day for my health, and I am to bathe, therefore I cannot be with you so much, or hear your lessons, as I used to do, at regular times."

"Never mind, my dear mother," said Lucy, "I will get them always regularly. You shall see, mamma, that papa was right in thinking you might trust to me, and I will follow Harry's example; and I will begin to-day, and this minute," added she, untying her bonnet. "I will put by my shell-tray. You will allow, mamma, that I am exact in putting by my things; and before I went away from you, mamma, I *was* regular in employing myself. I know that was the reason you said *resumed*. You shall see, mamma."

From this time forward, Lucy, at fixed hours, always went to her daily employments or lessons as punctually as Harry went to his, and performed them well, whether her mother had leisure to attend to her or not. Never did Lucy neglect or voluntarily omit any of them, one single day while they remained at the seashore. And when it was all over she declared, that of all the pleasures, the many pleasures she enjoyed there, the

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reflection that she had done this was the greatest. Nothing is more tiresome than to spend all day long in amusement, or in trying to amuse one's self. Lucy, after working hard and well at whatever she knew she ought to do, enjoyed with double pleasure the succeeding hours by the seashore. Harry, with complaisance which his lasting gratitude for the packing his camera-obscura sustained, used to help her to pick up shells, but it was not an amusement particularly to his taste; and when he had stooped till his back ached, which soon happened, he went off to refresh himself at some of his own works. He had a bridge to build, and a canal to cut, and a lock to make. These were some of the projects which he had formed during the journey, and which he was now eager to carry into execution.

He found a fine place for his canal, between two rivulets, at some distance from each other. His little bark might sail triumphantly, for a length of course, if he could effect their junction. He levelled and calculated, and calculated and levelled, before he dug, with as much care, perhaps, as has been bestowed upon some great public works. He dug and excavated indefatigably. His method of proceeding was to keep the water back by a small dam of earth till he had advanced a few feet; he would then remove the dam, and the water, which flowed in, detected any errors that he had committed in the level. When the cut, however, had been made some yards in length, the sides in many places fell in, for the soil was loose and crumbly. This misfortune was easily remedied by increasing the slope of the sides; but a more serious disaster befell our young engineer, which obliged him to recur to his father's never-failing advice. He had carried his work through a vein of sand; and though the sides had been properly sloped to keep them from falling in, yet when he opened the dam, and admitted a little water, it gradually disappeared, and left the canal dry.

His father willingly gave his assistance; and having examined the spot, and perceiving that the sand communicated with other porous ground underneath, he said, "This is a difficulty, my dear Harry, which often occurs to older and wiser engineers, and always occasions great increase of trouble and expense. I was in hopes that, by some alteration in the line of your canal, this leaky place might be avoided; but the sand

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is so extensive, that I believe your only resource will be to *puddle* the sides and bottom."

He took Harry to a ditch, at some little distance, in which there was a bed of strong, tenacious clay; and he explained to him that *puddling* was performed by spreading the clay in layers, wetting it sufficiently, and then beating it into a thick paste, which he would find was quite impervious to water. As soon as Harry knew what was to be done, he proceeded in his work with fresh vigour; and Lucy assisted him in carrying the clay in small quantities, such as their only basket would hold. The clay paste was well mixed and rammed with the but-end of a long club, and the sides and bottom were nicely smoothed with the back of the spade. When the dam was again opened, the canal was tight and firm to admiration, and Harry felt not only the pleasure of successful labour, but the satisfaction of having acquired knowledge in every step he took. Lucy stood by to witness and admire this operation, in which proper female consideration for her shoes and petticoats forbade her to join; but female sympathy is often agreeable, in circumstances in which woman's aid can in no other way be given. Something to this effect, but very unlike it in words, Harry once said to Lucy, and it paid her for standing above an hour looking on.

Harry had examined the real lock on the canal, and understood its construction so well, that he succeeded in making his miniature imitation. The canal about two feet wide and one foot deep; the lock about four feet long from gate to gate. The gates were made of an old hatch-door of the chicken-yard, which he found, posts and all, among a heap of rubbish, in the wood-house. His father gave him leave to take possession of it, and the woodman lent him a saw, with which he cut it in two, across the middle, leaving on each half one of the leather straps, which had served for hinges. He wisely contented himself with single gates at each end of his lock, as he was aware that neither his skill nor his tools would enable him to construct the double gates which meet together anglewise, so as to support each other, and which he well remembered was the case in the real lock. The posts he sawed in two also, in the middle of their height; but this he did without sufficient consideration; he spoiled his four well-season-

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ed posts, and lost a day by this rash act. He found each of them cut too short for the doors and sides of his lock, because he had not considered the depth to which it was necessary to drive them into the ground to make them stand firmly, and bear the weight of the doors that hinged upon or shut against them. He had four new posts to make, and these he made twice as high as the others, and drove them down several inches deep into the ground. This was the hardest work of all. Harry, without hat or coat, wielding the woodman's heavy axe, battered these piles with the but-end, lending his little soul at every stroke. At every pause Lucy in pity would say—

"Harry, pray do let me try now, while you rest yourself."

But when she took up the axe she found it was too heavy for her, and her strokes were so feeble that they did no good; the post never stirred at her hammering, never sunk, in twenty strokes, a hair's breadth. Each blow of hers was so uncertain in its aim, that Harry, fearing the axe would turn in her hands, and that she would end by cutting off her legs, besought her to desist, protesting that it made him hotter to see her batter than to batter himself. He assured her that battering was too hard work for women, and quite unfit for them; and she, being much out of breath, believed him, and resigned the ponderous axe. He worked himself into another heat, while she repeated many times—

"It will do now, Harry; it is deep enough down now, Harry, I am sure; that is enough."

But Harry battered on till the post would stir no more; then he was satisfied, for it was, as he said, "au refus de mouton."

"*Au refus de mouton*," said Lucy, "what can that mean? Mouton is mutton or sheep. What can mutton or sheep have to do with this?"

Harry told her that mouton is not only the name for mutton and sheep in French, but also for a battering-hammer, or pile-engine, the machine with which piles are driven down into the ground. He said that he met with the expression in a description of the pile-engine, which he had read in consequence of the old gentleman at Mr. Frankland's having excited his curiosity about it, by the description he gave of the houses in Amsterdam built on piles.

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"How curious it is," said Lucy, "to see how one thing leads to another, and how one bit of knowledge, sometimes in the oddest way, helps us on to another that seems to have nothing to do with it. And, Harry, think of your explaining this French expression to me, though I began to learn French so long before you, and though I heard so much of it, from French people too, when I was at aunt Pierrepoint's; I ought to be very much ashamed."

"Not at all, my dear," said Harry; "this is a scientific expression, not necessary for a woman to know."

Lucy looked as if she was not sure whether she should be satisfied or dissatisfied by this observation.

"Not necessary for a woman to know," she repeated, "to be sure it is not absolutely necessary; one could live without it; yet I do not see why a woman should not know scientific expressions as well as men."

"You are very welcome to know them, my dear," said Harry; "I do not make any objection. Am not I teaching them to you? But I hope, my dear Lucy, you will never use them."

"Never use them!" said Lucy.

"In the wrong place, I mean," added Harry.

"No danger, if once I understand them rightly," said Lucy.

"Still you do not quite understand me," said Harry. "If you knew the meaning of the words ever so well, there might be danger of your using them in the wrong place."

"Oh! Harry, how could that be?"

"Ask mamma, and she can tell you better than I can," said Harry.

"But tell me as well as you can," said Lucy.

"Then, for instance," said Harry, "if you were to talk of '*au refus de mouton*' before company, just to show that you knew the expression, or could say it. Do you understand me now?"

"Yes, but I would never do such a foolish thing," said Lucy.

"Pray do not, my dear sister," said Harry, "for it would make me feel horribly ashamed."

"I shall never make you ashamed of me, I hope, brother," said Lucy. "I will take great care. But there was another thing I was in a great hurry to say before you went off to this. Why is a battering-ram-

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mer, or a machine for driving down posts, or, what do you call them? piles, called a mouton?"

"I do not know," said Harry.

"I think I have found out the reason," said Lucy.

"Have you," said Harry, "then you are much quicker than I am, but that you always are."

"Only about words," said Lucy, "and I am not sure that I am right, but I think perhaps it is, because sheep sometimes butt this way with their heads."

"I do believe you are right," said Harry. "This must be the meaning of battering-*ram*. It never struck me till this minute. But I do not know what I shall do for want of nails to nail these leather hinges on my gate-posts."

Lucy recollected having seen some yesterday, left sticking in the lid of a deal packing-case, perhaps these would do. She ran to ask her mother if she might have them, and soon returned with them, and with a hammer, which had been used at the unpacking of the ease, and which, though it belonged to the carriage tool-box, her father lent her, trusting to her returning it punctually.

"Not only quick in words, but in deeds," said Harry, as she put the nails and hammer into his hands.

The hinges were fastened on, and Harry pronounced the lock to be finished.

"But after all," said Lucy, "here is your lock and your canal, but where is your boat to go upon it? Now you must make a boat, or a canoe, Harry. Yours, indeed, must be made out of a branch, not from the great trunk of a tree, to be in proportion to your canal."

"True," said Harry, "a branch, as you say, will do, but what size must it be? I must consider that before I ask papa to let the woodman give it to me."

"You might do it by the rule of three," said Lucy; "as the great canal is to the great boat, so must the little canal be to the little boat."

"Well," said Harry, "do the sum for me; here is a pencil and a bit of paper."

"But stay," said Lucy, "there is something more we want: I must have the measures of the great canal and the little canal, and the size of the great boat."

Harry measured his little canal, and gave breadth and depth to Lucy, who multiplied them rightly into one another. The measures of the great canal and the great boat he did not know, but his father estimated

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them for him, nearly enough to answer his purpose. Lucy and he worked out the sum patiently that evening; and when he knew the size required, his father gave him an order upon the woodman for a branch, or piece of a branch, of the requisite dimensions. He also borrowed for him a mallet, a chisel, and a gouge, and even an addice, which were necessary tools for hollowing out the solid wood, and for shaping the outside of the intended canoe. This last indeed is a dangerous tool, and should never be trusted without circumspection to young or to old hands, unless they be skilful and careful. Harry, both careful and skilful, for he had been practised in the use of this tool, under his father's eye at home, was trusted with it now; but upon special condition that Lucy was never to touch it. A condition to which Lucy, having just fear of her shins, as well as proper habits of obedience, willingly submitted.

As the hollowing out this canoe, chip by chip, was likely to be a tedious operation, Lucy left Harry and his addice to themselves, and went to her own amusements, upon the shelly shore. As she was creeping along, searching for shells, an old woman crossed her path, carrying on her back a huge basket full of seaweed. The woman's foot hit against some shingles on the beach; she stumbled, and let fall her basket, the contents of which were overturned on the sands. Lucy went to fill it again for her; and now seeing that she was the gate-keeper, who lived at the entrance of the wood, took hold of one of the handles of the basket, and helped her to carry it home.

Dame Peyton, for that was the old woman's name, thanked her, and accepted her offer, more, perhaps, for the pleasure of talking to the young lady on the way, than for any use in her assistance. The load, though bulky, was very light. The basket was chiefly filled with the little black bladders of a particular kind of seaweed. These, when dried and oiled, she strung, and sent by her daughter to the shops in a town hard by, where they were made into necklaces and bracelets, for whosoever, gentle or simple, might chance to have a liking for such. The dame loved talking, and she pursued her discourse. "You were a-looking for shells, miss, when I came by, I suppose; and if I may be so bold, I can show you more in an hour than you would find in a week without me; for I know where the beds

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of them lie, and where the sea-urchins bide, miss, if ever you heard of them urchins."

Lucy was eager to find a sea-urchin, and had been searching for one in vain. As soon as they reached the cottage at the gate where she lived, Dame Peyton pointed to a shelf in her corner cupboard, on which were several shells, which had been left there by her sailor son, who had picked up some of them from the neighbouring sands, and some from foreign parts.

The shell of the sea-urchin, which Lucy first examined, was about the size of an orange, the shape of a turnip, and divided into compartments like a melon; the colour was lilach, but looking as if sprinkled thickly with little white frosted sugarplums in some of its quarters; and in others, perforated with a multitude of holes, nearly as small as pinholes. The shell was as light as an empty egg-shell. Through each of the little holes, the urchin, when alive, puts out its prickles or spines, which stand in all directions round the creature's shell, like the prickles of a hedgehog. Lucy, who had read the description of it, knew that these serve the sea-urchin for legs, with which, at the bottom of the sea, it can walk, as it is said, in any direction, sometimes with its mouth upwards, sometimes with its mouth downwards, sometimes rolling along sidewise, like a wheel. There was an opening at the upper part of the shell, which served for its mouth, and another opposite to it, through which the creature can at pleasure push out or draw in what resemble the horns of snails. These, which were formerly supposed to be its legs, the urchin uses only to feel about with when it walks, as a blind man uses a staff to touch and try every thing that lies in his way.

Lucy, who knew all this from her books, was eager to see the fish alive, with all its spines about it. But Dame Peyton's dinner was ready, boiling over in her pot; and though the good-natured old woman would have left it to go that instant to show Lucy the haunt of the urchins, yet Lucy would not let her. She waited till evening, and then Harry accompanied her, though rather unwilling to lay by his addice and leave his canoe.

As he went with Lucy towards the appointed place, he objected to her wonderful account of the urchin's mode of walking on the spines. He said, that as these creatures were in the habit of walking only at the bot-

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tom of the sea, few people, only those who had gone down in a diving-bell, could have observed them walking.

"You shall see, you shall see them yourself, Harry!" said Lucy.

She recollected what she had read, that Reaumur had first seen an urchin walking at the bottom of a shallow pan, full of seawater, and, at her request, Dame Peyton had provided one of her shallow milkpans to show the experiment. They found her waiting for them when they reached *Urchinstown*. She took out one from a number of these fish, which had congregated together, and put the apparently inanimate ball into the pan full of water. Presently it sent forth some of its hundred horns through the holes in its shell, and soon stretching its spines, it appeared with all its wiry-looking prickles full upon it. Thirteen hundred horns and two thousand spines, well counted.

"It moves! it moves! Now, Harry, see it rising up. Now it is putting out its feelers from beneath. Now look at it feeling about like a blind man with his staff. And now he is really beginning to walk! Look at him walking on his spines, like a wheel on its spokes. How beautifully he goes on!"

"He is an admirable mechanic!" exclaimed Harry. "Look how he uses some of his spines as a fulcrum, against which he pushes and draws on his shell by turns. I did not think any fish could have so much sense."

Harry's admiration increased, as well it might, the more he considered these things.

"Now, Harry, you see that even my shell-hunting leads to something," said Lucy. "You will not despise shellfish when you know more about them and their houses."

After this day, whenever Harry wanted to rest himself from his hard labour, he used to go to Lucy to learn something more of her shells.

One day she showed him the shell of the razor-fish, and told him in what an ingenious manner the fish which inhabits this shell can move itself forward, or descend into its sandy hole. It does not walk upon spines, but by means of its tongue. It has a fleshy cylindrical tongue, which it can use by turns as a shovel, a hook, a borer, and a ball. When it wants to go on, it

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forms its tongue into the shape of a hook, which it strikes into the sand, and by which it pulls its body after it. When it wants to descend, it bores a hole in the sand with its tongue, sometimes two feet in depth; and when it wants to ascend to the surface it forms the end of its tongue into the shape of a ball, which stops the bottom of the hole, and serves as a fulcrum; and then making an effort to extend the whole tongue, pushes the shell upwards, till, by a repetition of this operation, it gains the surface.

Of all things, Lucy most wished to see a barnacle; not for its beauty, nor for its rarity, but on account of the strange stories she had read concerning it. She had first met with some account of it in a note on the barnacle, in her Bewick's British Birds; and afterward she had copied from some other book a whole page of its fabulous history. She searched along the shore many a time in vain for a barnacle; but Dame Peyton gave her one, which had been found by her sailor-boy at the bottom of an old plank of a ship. Lucy ran with her treasure to Harry, and showed it to him. It looked something like a transparent, white, flexible gristle, branching from one centre or body into various arms; at the end or summit of each branch there was a small shell, about the size of a bean, and of the shape of the bill of a large bird. These arms or branches are called pedicles, or footstalks; by these the fish attaches itself to rocks, or to the bottoms of vessels. These footstalks are sometimes of a fine red, and the shells sometimes of a violet colour.

"But now, Harry," said she, "you might guess for ever what, not only foolish people, but grave naturalists, my dear, who wrote books in former times, believed came out of these little shells; pray guess."

"I suppose some sort of fish," said Harry.

"No—but a bird! a goose! a great goose," said Lucy, "out of each of these tiny shells. This was called the tree-bearing goose. And now let me read this to you, or read for yourself, if you please, and can read my small handwriting."

Harry read as follows:—

"'What our eyes have seen, and hands have touched, we shall declare. There is a small island—'"

Lucy put her hand over the name of the place, and bid Harry read on without knowing where the place was.

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"'There is a small island, wherein are found the broken pieces of old bruised ships, some whereof have been cast thither by shipwreck; and also the trunks and branches of rotten trees, whereon is found a certain spume or froth, that in time breedeth into certain shells, in shape like those of the muscle, but sharper pointed, and of a whitish colour, wherein is contained a thing, in form like a lace of silk finely woven together, one end whereof is fastened to the inside of the shell, even as the fish of oysters and muscles are; the other end is made fast unto a rude mass or lump, which in time comes into the shape and form of a bird. When it is perfectly formed, the shell gapeth open, and the first thing that appeareth is the aforesaid lace or string; next come the legs of the bird hanging out, and as it groweth greater, it openeth the shell by degrees, till at length it is all come forth, and hangeth only by the bill; in short space after it cometh to maturity, and falleth into the sea, where it gathereth feathers, and groweth to a fowl bigger than a mallard, lesser than a goose, which the people of—'"

Lucy put her finger over the place,

"'Call by no other name than a tree-goose, which place aforesaid, and all those parts adjoining, do so much abound with, that one of the best is bought for threepence.'"

"I never heard such nonsense in my life," said Harry.

"'For the truth whereof, if any doubt,'" continued Lucy, reading, "'may it please them to repair unto me, and I shall satisfy them by the testimony of good witnesses.'"

"Good witnesses, indeed!" said Harry.

He asked in what part of the world, and at what time, in what age, such nonsense could have been believed. He supposed that it must have been in the dark ages, and at "Nova Zembla, or the Lord knows where." He was surprised when Lucy told him that the place reputed to be the native soil of the "tree-bearing goose" was in England, in a small island on the coast of Lancashire; and that the time when grave naturalists wrote its history was the latter end of the days of Queen Elizabeth. "But what could have given rise to such a strange story?"

Lucy said that there was no reason given, but that the

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silky-looking membrane which hung out of the shells of the fish look something like feathers.

Their mother observed that, as the barnacle goose was a bird of passage, and appeared only for a short time in severe winters, the country people had not means of learning their history, nor could they tell how they came there; and seeing the barnacle-shells also but seldom, and perhaps happening to see these also in bad weather, when cast ashore on shipwrecked vessels, they had concluded too hastily that one thing was the cause of the other, because it appeared at the same time, or just before it.

Lucy said this was natural for ignorant peasants; "But for naturalists, mamma, and people who write great books, think of their believing that a great goose, which weighs (I have it written down here) about five pounds, and measures more than two feet in length, and nearly four feet and a half in breadth, came out of this little shell!"

"But, Lucy," said her mother, "I do not think that is the incredible part of the story."

"No, mamma! don't you indeed?"

"I do not. Do not the common geese you see every day come from an egg almost as much less than the full-grown bird as the barnacle-shell is less than the barnacle goose?"

"That is true, to be sure," said Lucy; "great birds come from small eggs, we see. But then, mother, the wonder is that the bird should come from the shell of a fish."

"Now you have it, Lucy," cried Harry.

"And why should not that be believed?" said their mother.

"Oh, mamma! and do you really believe it?" cried Lucy.

"I do not recollect telling you that I believed it," replied her mother, smiling. "But I asked you your reason for disbelieving; unless you can give some reason for your belief or your disbelief, you are not wiser than the poor people you have been laughing at."

"That is perfectly true," said Harry; "but I did not think of it till mamma said so."

"My reason for not believing it," said Lucy, "is, that it is contrary to all we ever heard or read of the history of birds or fishes."

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"That is a good reason," said her mother; "all that we know of their history is from observation, or from reading the observations of others; and all the means we have of judging whether any new fact we hear related be true or false, must be from comparing it with former established facts, and considering whether it agrees with them or not."

"Yes, mamma, I understand," said Lucy; "also by considering whether it agrees or not with what are called the laws of nature."

"And what do you mean, my dear, by the laws of nature?" said her mother.

"The laws of nature," repeated Lucy, to gain time. "Oh, mamma! you know what I mean by the laws of nature; you only ask that to puzzle me."

"No, my dear Lucy, I ask it only that you may not puzzle yourself; that you may not use words without clearly understanding their meaning."

"Is not *the laws of nature* a good expression, mamma?" said Lucy.

"A very good expression for those who understand what they mean by it," said her mother; "but no expression can be good for those who do not. To them it expresses nothing."

Lucy thought for some time, and then said, "Harry, do you try, you can explain it better."

"You mean by the laws of nature," said Harry, "things or circumstances which have been known regularly and constantly to happen about animals, and vegetables, and minerals, and all things in nature. I cannot express it quite, mother. But, for instance, it is a law of nature that the earth turns round every twenty-four hours."

"Yes, that the sun rises every morning," said Lucy. "And in the same way it may be said to be a law of nature, mamma, that birds do not come of fishes' shells."

"Very well; between you, you have explained pretty nearly what is meant by the laws of nature," said their mother.

"What, from the beginning of the world, was never in any instance known to happen, we do not believe *can* happen," said Harry, "I mean in nature. And yet," continued he, "new facts are discovered, which sometimes prove that what was thought to be quite true, and a settled law of nature, is not so."

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"But," said Lucy, "to go back to the barnacle goose-tree. Harry, suppose that you and I had lived in Queen Elizabeth's days, and in Lancashire, and near that island of geese, do not you think that we should have believed in the goose-tree?"

"I hope not," said Harry, "but I am not sure."

"Suppose that a great many people had told you that they were sure there was such a tree," said Lucy, "what would you have said then?"

"I would have asked whether they had seen it themselves, or whether they had only heard of it from others," said Harry; "I would have questioned the people separately, and have observed whether they all agreed or disagreed in their answers. And, above all, I would have gone to the place, and would have examined the barnacle-shells with my own eyes. Then I think I should have perceived that what people had mistaken for feathers of a bird, were the membranes, or, what do you call them, Lucy? *tentacula* of a fish. I would have returned at different times of the year, to watch what became of the barnacles, and then I think I should have found the truth."

"And I think, Harry," said his mother, "that if you follow such a prudent course, in judging of extraordinary assertions, you will never be the dupe of wonders or wonder-makers. Whenever either of you feel inclined to believe in a wonder, without proof, pray remember the barnacle goose and the goose-tree."

So long as Lucy had any ingenious contrivances to show Harry in her shells, or any curious anecdotes to tell him of the modes of life of their inhabitants, he looked, and listened, and was pleased; but he ceased to be interested, and looked dull, when she told him any of their hard names. He, however, admitted, that the great classes into which shells are divided are easy to remember, and he liked their names, *univalves*, *bivalves*, and *multivalves*. Lucy placed before him a snail-shell, an oyster-shell, and a barnacle, as examples of each class. He examined the curious construction of the hinges of various shells, but farther he had no curiosity; he could not, he said, understand the use of Lucy's spending so much time in settling to what order each

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shell belonged. Lucy had much to say in favour of the use and advantages of classification to preserve things in order in our memory, and to assist us in recollecting them more easily; but it was not a good time to enter upon the subject now, because Harry's head had gone back to his boat. He had finished it, and he wanted her to come out and look at it. She put aside her shells directly and followed him.

The boat, it must be confessed, was but a clumsy affair; the few tools that Harry had were in very imperfect order; but he forbore to complain, because he had once heard from Lucy a French proverb, "Un mauvais ouvrier se plaint de ses outils." A bad workman complains of his tools. Imperfect as the boat was, Lucy viewed it with indulgence; and when harnessed to it, she towed it along respectfully and with the greatest circumspection, often looking back to see that she did not upset or *strand* it by pulling it against the bank. Harry, however, remonstrated against her looking back, which he observed was out of character for a horse; he told her that she should go steadily on with her head down, and that he would take care of all the rest, and guide and govern horse and boat. The boat was on the upper branch of the canal, and Harry, as *lock-man*, shut the lower gate, so that the lock might fill. But the lock did not fill! The water indeed rose a few inches, but gushed out with sad velocity between the gate-posts and the sides of the lock. Harry stood calmly contemplating this disappointment, and considering how he could make good the defect, when Lucy, who observed that the water was actually subsiding instead of rising, said,

"Indeed, Harry, you need not stand there looking at your posts, for all the water that was in the lock has run out; I think it has found some other channel."

"True," replied Harry, "we must stop up our useful dam once more, and then we shall discover the fault. No knowledge like that we gain by experience."

The dam was soon stopped; and, when the lock was nearly dry, Harry perceived, that the pressure of the water when it had begun to rise had torn away the loose earth under the gate, and escaped almost as freely as if there had been no gate. After due deliberation on the best means of obviating this unforeseen evil, he resolved to fix a *sill* in the bottom of the lock, from post to post, so that the gate should shut tightly against it.

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"Lucy," said he, "one of those old posts, which I so awkwardly spoiled, will now be of the greatest service."

Two days were occupied in this undertaking, the sill was at last securely pegged down to the ground; and for fear of a similar misfortune with the upper gate, he laid a sill to it also. To prevent the weight of the water from undermining these sills, he paved the bottom of the whole lock and a small portion of the canal with large flat stones; and the intervals between the gate-posts and the lock sides he puddled with great care. Another happy thought occurred to him; he had felt the difficulty of opening the gates when the water was bearing against them, and he now provided means for letting it off gradually, by boring two round holes in each gate, into which he fitted plugs, in imitation of the *sluices* in the real lock.

A satisfactory trial was made of their work, and having ascertained that all was right, Harry ran home, and requested his father to come and see his boat going through the lock. His father came; and first it was to go down the stream. When it came within proper distance of the lock, the lower gate was closed, and the sluices of the upper gate were opened by Harry with due ceremony, and with proper apologies for not having double gates. The lock was now brimful to the level of the stream, through which the boat had passed. The boat entered—the gate behind it was shut—Harry opened the sluice of the lower gate, and by happy degrees the boat sank as the water flowed out, till it came down to the level of the lower branch of the canal. Then the lower lock-gate was opened, and out was drawn the boat safely and happily.

"Just as well," said Lucy, "as it was managed in the real lock on the real canal."

"Say on the great lock on the great canal," said Harry, "for this is a *real* lock, is it not, father? though it is small."

To reward him for his perseverance, his father promised Harry to provide him with the tools necessary for the better finishing his boat. He showed him the principal faults in its shape, and explained to him that the middle part of a boat or ship is made broad, or *full*, in proportion to the kind of cargo it is intended to carry; that the foremost end, or *bow*, is rounded off to a sharp

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edge called the *stem*, or *cutwater*, in order to lessen the resistance in moving; and that the *stern* is made very narrow under water, to allow the full impulse of the water to strike the rudder.

Soon afterward his father took Harry with him to see a boat, which was building at some miles distance from Rupert Cottage. There he learned how the ribs of a boat are put together, and fastened to the keel, so as to make them as strong and as light as possible. Harry told Lucy, when he returned, that the framework of a boat, before the boards are put in, looked like the skeleton of the dead horse which they had often seen in a grove near their father's house. He told her that he had heard the boatmaker and his father talking about shipbuilding, and of some great improvements that had been lately made. Harry could not understand much of what they said, because he had never seen the inside of a ship; besides, the boatbuilder talked in workman's language, using a number of terms that were familiar to shipwrights, but not to him; and taking it for granted that everybody must know what he was talking of.

"I picked out, however, some things that interested me," said Harry; "particularly some that concern the steam-vessels. These improvements in shipbuilding have been of great use to them. People have learned how to put the timbers together in such a manner as to make vessels much stronger than they were formerly; so that now they can bear the *straining* and *working* of the steam-engine. I heard the man say, that unless they had been so strengthened, engines of such great power could not have been used: in short, they could not have made the steam-vessels carry so much, or go so fast or so safely, as they do now."

"That is good for the steam-vessels," said Lucy, "and for all who can go in them; and some time or other, perhaps, I shall go in one myself. But, Harry, you said there were other things you heard which interested you; what were they?"

"Oh, I heard of one very ingenious and useful invention," cried Harry, "for taking down easily and quickly the upper masts—topmasts, as they call them, of ships."

"Upper masts! topmasts!" repeated Lucy; "I do not understand what you mean. I thought the mast of a ship was all in one; a great thick, straight, upright pole, like the stem of a tree."

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"But it is not all in one piece," said Harry. "There is a piece put on at the upper part of the lowest mast, to which sails are hung, which are called topsails; and that piece is called the topmast. It is often of great consequence for sailors to be able to take down and put up the topmasts quickly, as my father explained to me. Sometimes a topmast is broken by a high wind, or a sudden squall, and till they can replace the broken mast, you know, they cannot make use of the sail that belongs to it. Perhaps at that moment the ship may be running away from an enemy, or perhaps trying to escape from some rocky shore on which they are afraid of being wrecked."

"Then to be sure the sailors must be in a great hurry," said Lucy, "to get down the broken mast directly."

"But they could not do it directly in the old way," said Harry; "it required a great many men pulling and hauling, and a great deal of time, an hour at least, even if there were plenty of men; and sometimes there are few men, and then it takes a longer time; two hours very likely: now, by this new invention, they say it can be done by one man, or two men at the most, and in five minutes, or less."

"And how is this done?" said Lucy. "Will you tell me the old way first, and then the new way, if you can make me understand them?"

"I do not understand them myself yet," said Harry; "but I shall soon know more about the matter, I hope. My father is to go next week to see a friend of his, who lives near Plymouth; and there is a great dock-yard at Plymouth, and a number of ships there; and among them there is one that has this new invention."

"But are you to see it, my dear Harry?" said Lucy.

"Yes, my father says he will take me with him," said Harry; "is not that good?"

"Very good; and next week too! and you will tell me all about it, Harry, when you come back; and I hope you will see a man-of-war, and that you will describe that to me too," said Lucy.

Next week arrived, and Harry's father took him to Plymouth, and to the dock-yard. On his return he told Lucy that he had seen and heard so much, that he did

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not know where to begin his description, or what to tell her first.

"First tell me about the man-of-war," said Lucy, "if you saw one."

"I saw many," said Harry, "and I went on board one, and all over it; but it is impossible to give you any idea of it."

Harry, however, attempted to give her an idea of its magnificent size, the height of the masts, the spread of the sails, the intricate rigging, the coils of ropes on the deck, and the vast thickness of the cables, which were to draw up the huge, ponderous anchor. Then he described the accommodations, and all the conveniences for living in this floating wooden town. It was more like a town than a house, he said, as it was of such an extent, and contained so many inhabitants; several hundred men, and all their provisions, and all they must want for living months, perhaps years, at sea. He described how the sailors' hammocks were slung, and how they were aired every day on the deck. Then he described the captain's cabin, a large handsome room, with a sofa and writing-table, and a bookcase, and all the comforts and luxuries of life. But principally Harry expatiated on the manner in which the arms were arranged in the gun-room, in star shapes and curious forms, which at first he thought was merely for ornament; but he learned that they were all so placed in order that they might take up the least possible room, and that they might be found easily in time of need. And in the store-rooms he observed that every thing, great and small, down to the least bolt, screw, or nail, had its own place. The use of order was seen there to the greatest perfection.

"In *time of action*, as they call it," said Harry, "meaning in time of battle, and in a storm, when the safety of the vessel and the lives of the men all depend on their being able to find what they want in a moment, consider, my dear Lucy, what advantage it must be to have them all in order? But I cannot give you a right idea of it. You must see it, Lucy; and I hope you will some time."

"And I hope then you will be with me," said Lucy.

"I hope so," said Harry; "so now I will tell you about the *fid*."

"What is a *fid*?" said Lucy.

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"A thick iron bolt," said Harry, "which is run through a hole in the *heel* or lower end of the topmast, when the topmast is up in its place. The ends of the fid rest upon two strong bars of wood, which are fixed to the *head*, or upper end of the great lower mast. The topmast stands up between these bars, and the fid, you perceive, Lucy, supports its whole weight, as well as that of all the sails and yards which are hung on it. And besides all this weight, there are several thick ropes from the head of the topmast, which are called *shrouds*, and which are fastened down very tight, in order to steady it. Now you must understand next," continued Harry, "that when the topmast is up, it cannot be taken down without first taking out this fid."

"But what a very odd name *fid* is," said Lucy.

"Fiddle-faddle," said Harry, "never mind that; one name is as good as another when you are used to it. Now let me explain the thing itself. Before the fid can be pulled out, the whole weight of the topmast must be lifted up off it; and before this can be done, all the ropes which steady it on each side must be loosened. To lift this great weight there must be great pulling and hauling; and altogether it is a long, difficult job, and many men must work hard at it, and for a long time. But now, without loosening a rope, and with only one or two men, they get out the new *lever-fid* in a few minutes."

"How very nice!" cried Lucy.

"Nice!" repeated Harry, "what a word, when talking of the masts of a great ship!"

"One word is as good as another, when you are used to it, as you said about fid," replied Lucy, laughing. "But what is the contrivance? You have not told me that. Can I understand it?"

"Yes, if you understand the general principle of the use of the lever. Are you clear of that?"

"I believe I am," said Lucy; "I know what you have told me, and shown me, that the greater the space your hand passes through in moving the long end of a lever, the more weight you can move at the short end of it."

"Very well; you might have put it in other words—but I believe you understand something about it," said Harry. "Now for the *new lever-fids*. Instead of one great bolt run through the mast, there are two strong levers, one at each side of it: and they are fixed on the

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same bars which supported the ends of the common old fid. When the topmast is up in its place, the short arm of each lever goes a little way into the hole in its heel, and the long arm is securely fastened by a small pin to a frame of wood. When it is to be lowered, the little fastening pins are taken out; the levers immediately tilt up, and down comes the topmast; but not with the sudden and dangerous jerk you might suppose, because there are ropes from the long arms of the levers, by which the sailors manage the affair as gently as they like."

"So then," said Lucy, "you mean that these two little pins, from being applied at the ends of the long arms of the levers, have power to *balance* the whole weight of the great topmast, and all its ropes and sails, and other things, that are supported on the short arms: how wonderful!"

"There is the wonderful power of the lever, Lucy," said Harry.

"Then you could lift any weight in the world with a lever, if you had but one long enough and strong enough," said Lucy.

"If I had space and time enough, and something to stand upon," said Harry. "I am glad, Lucy, you are so much struck by the use of this wonderful power; for, as my father said to me, when we were talking about the fid, on our return home, it does not much signify whether we know the best way of lowering the topmast of a ship; but the principle of the lever, it is of great consequence that we should understand; because in some way or other, little or great, we have to use it every day, in the most common things."

"Yes," said Lucy; "for instance, at this moment, when I am going to stir the fire, I could not, without the help of this lever in my hand, commonly called the poker, raise up this great heavy coal, which now I lift so easily. Look: putting the point of my poker-lever under it, and resting my lever on the bar—"

"Yes; the bar is your fulcrum," said Harry.

"And by pulling down the other end of the poker, I gain all the *power*, as you call it, of this long lever."

"Tell me exactly what advantage you think you gain," said Harry. "Tell me how you would measure it."

"I gain the advantage of the whole length of the poker," said Lucy.

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"Not the whole length of the poker," said Harry. "Look where it rests on the bar: from that bar to the point under the coal is what we may call the short arm of your lever; and from the place where it rests on the bar to your hand, is the long arm of your lever: now, if you were to measure those two lengths, and find how many times longer the one is than the other, you could tell exactly the advantage you gain in this case, and in every possible case in which a lever is used."

"Ha! the proportion between the long and the short end of the lever," said Lucy, "is the advantage gained. Now I know exactly. Oh! I hope I shall remember this."

"But, Lucy, is not this lever-fid a very simple invention?"

"Beautifully simple," said Lucy. "I only wonder that it was never found out before."

"That is the wonder always, when any good contrivance is made," said Harry. "But now I will tell you another wonder—that this was not found out by any sailor, or captain, or admiral, or any seaman of any kind; but by a *landsman*, as the captain said to papa: and what is more, he belongs to a profession quite away from the sea—he is a lawyer."

"A lawyer!" Lucy exclaimed.

"And what do you think made him a lawyer?" said Harry.

"I suppose studying the law," said Lucy, "and, as they say, being *called to the bar*."

"But," said Harry, "I meant to ask, what do you think first turned his mind to the law, or determined him to become a lawyer? My dear, it is a foolish question of mine, because you cannot guess; so I will tell you: it was his love of mechanics."

"How could that be?" said Lucy.

"I will tell you," said Harry; "I heard the whole story; for a gentleman, a friend of his, who had known him from a boy, and as well as he knows himself, was telling it on shipboard to my father. This is what I wanted to come to all the time I was telling you about the *fid*. The inventor, who has made such a useful invention, which will probably save many ships, and the lives of all that are in them, has often said to his friends, that he owes all his success in life to his early love of mechanics. When he came home from school, he used

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to employ himself in doing all the little mechanical jobs that were wanting about the house; he used to mend the locks, for instance: then, in taking a lock to pieces, he saw how it was made, and by degrees learning the use of tools, he made many things which he could not afford to buy when he was a boy."

"What sorts of things did he make?" said Lucy.

"I do not know *all*; I only heard of a desk and a little cabinet, I think. Then he took to pieces an old watch of his father's, and learned how to put it together again. When he left school, he lived two years at home with his father, and sometimes he employed himself in drawing maps. In attempting to draw portions of very large circles on his maps, he found great difficulty for want of right instruments; and he invented and made for himself an instrument, by the help of which he could, as his friend described it to my father, draw these small portions of circles without the necessity of using compasses, or finding a centre."

"I wish you had invented that, Harry," said Lucy.

"I!" exclaimed Harry: "but do you know he was only eighteen at that time? Well, he was one day using his instrument, and not at all aware that it was any thing but a help to himself, when a gentleman came into his father's study where he was drawing; this gentleman was charmed with the invention, and advised him to offer it for sale to some optician, or some maker of mathematical instruments. He determined to follow this advice, and set about directly and made one neatly in brass, and carried it to London to an optician, who approved of it, and gave him for it an airpump, and an electrical apparatus, and some other instruments!"

"Delightful!" cried Lucy. "And what did he do next?"

"He improved his own little instrument by adding a scale to it; then other people used it, and found it answered, and at last, what do you think? he had a silver medal voted and presented to him by the Society of Arts, when he was yet a boy, as his friend said, not out of his *teens*."

"A silver medal from the Society of Arts! I know the look of it," said Lucy. "I saw one that was given to a friend of papa's: I remember seeing it in its little crimson case, lined with satin. But what an honour for a boy!"

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"He did not stop there," said Harry, "he went on—"

"I know; to the fid," cried Lucy.

"Stay a bit," said Harry; "we are not come to the fid yet. During those two years he lived in a lonely place in South Wales, and his attention happened to be turned to the shoeing of horses. Some horse of his father's was ill shod, I suppose, and he considered how to prevent horses' feet from being cramped and hurt by their shoes. He invented an elastic horseshoe."

"Better and better!" said Lucy.

"Stay a bit," said Harry; "it was tried upon the horses of some regiment of horse guards, and it did not do."

"What a pity! that must have vexed him very much," said Lucy.

"Not at all," said Harry; "I should think not. A man cannot expect always to succeed in every thing, much less a boy. But though the horseshoe did not succeed, yet it led to the most important event of his life."

"How? tell me that," said Lucy; "I am always glad in lives when we come to those words."

"Tell me first," said Harry, "do you know what is meant by taking out a patent?"

"Not very well," said Lucy.

"Not very well! But do you know at all? Do you know what a patent is?"

"Not exactly," said Lucy; "but I have read about patents and monopolies in the English history long ago to mamma, in the reign of King James, or King—"

"Never mind about the kings or their reigns," said Harry. "Go on to the thing, if you know it."

"I know that the kings of England were blamed," said Lucy, "for granting these monopolies and patents."

"But what were they?" said Harry.

"I believe they were permissions granted to particular people to sell particular things, and orders that none should sell those things but themselves," said Lucy.

"I did not think you knew so much about it," said Harry. "How came you to know that?"

"The way I know most things that I do know," said Lucy. "Mamma explained it to me when I was reading to her."

"But those were some of them unjust patents; and mamma explained how and why, I dare say," said

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Harry, "as my father did to me yesterday. But there are patents in these days which I think are very just: laws which, by granting some writing called a patent, secures to whoever makes any new useful invention the right to sell it to others, and to have all the credit and profit of it for a certain number of years, as a reward for their ingenuity."

"Very fair," said Lucy.

"This gentleman wanted to have a patent for his horseshoe," continued Harry, "and before he could obtain it, it is necessary, they say, to make out, in a sort of law paper, a description of the invention in lawyer's words. He went to a great lawyer to do this for him; but the great lawyer was no mechanic, and he did not understand and could not describe the thing at all. He did the law words rightly, but the mechanic himself was obliged to write the description; so, borrowing the law terms from his lawyer, he put the description in himself, and he did it well, and it was thought by others to be well done. Now he found that some lawyers are paid a great deal of money for drawing out these *patent descriptions*,* or whatever they call them. This first put it into his head that, if he knew as much of law as was necessary for this, he could do the whole himself, and earn his bread by doing it for other people. This determined him to learn law, and he did: so you see, as I told you, his love of mechanics first made a lawyer of him. He acquired all the knowledge requisite; and now, as his friend said, he is unrivalled in England in that particular employment. But now I must tell you another curious circumstance," continued Harry, "to show you how, after he was a lawyer, he was brought back to mechanics again. It happened that he was employed as an advocate in some cause where there was a dispute about the loss of a cargo, or the goods, on board a merchant ship which had been wrecked. He was to examine the captain of the ship, in the court of justice, to find out whether he had or had not done all that was possible to save the ship and the cargo. In this examination, he asked the captain some question about the lowering the topmasts. The captain laughed at him for his question, whatever it was, because it showed that he did not understand rightly how the topmasts were to be got down. The captain

* *Specifications* is the word which Harry did not know.

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explained this to him, and showed him the difficulties, and I suppose told him all about the fid—the common old fid, I mean. He perceived what an inconvenient contrivance it was; and that very evening, after the trial, by considering how a fid could be better managed, he invented the lever-fid. His friend said, that when he went to his supper, he cut out the shape of his lever-fid in a bit of cheese, and thinking that it would answer its purpose, he could not go to rest till he had made a nice little model in boxwood. He made model after model till he was satisfied. Then how to get it into use was the next difficulty. The gentleman said a great deal about the *Lords of the Admiralty*, that I did not understand: but, in short, his contrivance was approved by them, and they ordered that all the assistance he wanted should be given to him, for trying it in some one ship. The Maidstone frigate, I remember, that was the name of the ship in which it was tried, and it succeeded perfectly. The first time the ship went out to sea with it, the topmast was to be taken down; and this was done so easily and quickly, that all felt the use and excellence of the invention; and the officers of the navy have given it their decided approbation, and it has been brought into use in a great many ships."

"How happy the man who made this invention must be!" added Harry.

"And his sisters, and his father and mother," said Lucy; "how glad they must be to see it succeed so well, and to know how useful it is."

"An invention useful to all the British navy. What a grand thing!" said Harry.

After pausing, and considering for some time, Harry added—

"Yet he was once a boy like me, and trying little mechanical experiments. My dear Lucy, I heard his friend telling my father something which made a great impression upon me; the more so because he was not thinking of me, or that it could do me any good to hear it when he said it."

"What did he say?" asked Lucy, eagerly.

"That this gentleman attributes all his success in life to his having early acquired a taste for mechanics, and to the habit of trying to invent and to improve his early inventions in those two years, which he employed so well at home when he came from school, and before he

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was fit for any profession; a time which they say many boys waste in idleness."

"I am sure you never will, Harry," said Lucy.

"No, after hearing this, I think it would be impossible I should," said Harry. "This has raised my ambition, I assure you. But I must go on as he did, learning by degrees, and be content with doing little things first."

"What will you do next," said Lucy, "now you have finished your boat and your lock?"

"I have a plan," said Harry. "You shall know it to-morrow."

Harry's new project was to build a bridge over a little mountain stream, which had often stopped his mother in her walks. He had already laid a board across, from bank to bank, and had fixed it steadily; but upon this two people could not walk abreast, nor could the ass-cart pass this way; it was necessary to take it by another road, a quarter of a mile round. That a bridge at this place would be a *public* and private benefit seemed evident, and Harry was ambitious of building a real, substantial, arched bridge, which should last, he would not say for ever, but as long as man could reasonably expect a bridge to last. This project was heartily approved by his prime counsellor, Lucy, before whose quick anticipating eyes the arch instantly rose complete.

"And when it is built," cried she, "it shall be called *Harry's bridge!* or *my mother's bridge!* which shall we call it, Harry?"

"Let us build it first," said Harry, "and we may easily find a name for it afterward. Come with me to the place, Lucy."

When they reached the spot, Harry bid her guess what the distance was from bank to bank. She guessed about a yard and a half.

"A yard and a half! such a woman's measure. That is four feet six," said Harry.

Such a man's measure! six what? Lucy might have said, had she been disposed to retort criticism, but that was far, far from her disposition. She knew what he meant, and that was all she thought of.

"Four feet six inches," said she. "Is it more or less?"

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"You are within half a foot of it, my dear," said Harry. "My arch must be a five feet *span*. I mean that the width across from butment to butment, from foundation-stone to foundation-stone on the opposite sides, must be five feet. But there is my father," cried Harry, "on the sands below, at the very place where I want him to be. I will show him my plan directly."

Down the hill ran he to the seashore, and down ran Lucy after him with equal speed. Their father was stopped short, and the bridge project started, and his consent, assistance, and advice anxiously requested. Lucy thought his first look was not favourable. He shook his head, and answered, that he feared Harry would find it beyond his skill or present knowledge to construct an arch.

Harry stood quite still and silent for a minute or two; then collecting himself, he deliberately answered,

"I remember, father, your showing me long ago an arch, which you made for me of a thin lath between heavy weights, half hundred weights from the great scales, which were placed at each end for butments. Then I pressed on the top of the arch, and felt how strong it was; it bore all my weight, I recollect. This, I think," continued he, in a very modest but firm tone, "made me understand the great principle of the arch, which, as you told me at the time, depends on the butments being secure. And I will take care and make the butments of my bridge strong enough."

"You will do well, Harry; and you remember well and understand one great principle on which the security of an arch depends, but there is much more to be known and considered. However, my dear boy, try and build your bridge; you will learn best from your own experience; you may amuse and instruct yourself at the same time. Tell me what assistance you want, and I will tell you whether I can give it to you."

"Thank you, father. Then, in the first place, will you come on a few steps, that I may show you my arch, which I have drawn on the sand, and will you give me your opinion of it?"

Lucy ran on before to see it first, and then waited anxiously to hear her father's opinion. She saw surprise in his countenance the moment he looked at the arch described on the sand.

"This is well done, Harry. This will do," said he.

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"Who showed you how to describe this arch, or how happened it that you chose this shape more than any other?"

"Nobody showed me how," said Harry, "but I took it from the little bridge which I saw the mason building in that lane where we went to look at the road mending. I measured the centring as it lay on the ground when they had done with it, and I drew my arch exactly by that centring."

"What is the *centring*, Harry?" whispered Lucy.

"A sort of wooden frame, on which the stones of the arch are supported while it is building," said Harry, "for you know they could not hang in the air."

His father told Harry he thought he had done wisely to take advantage of the experience of a mason, who was used to build bridges, instead of going to work rashly, without knowing what he was about.

"But, father," said Harry, colouring, "I do not think I deserve to be praised for prudence; I was not prudent at all, at least not in the way you think. I would much rather have done it all myself, and drawn my arch my own way, and different from this; but I took this curve because the mason's centring will fit it, and I thought you could borrow it for me; and that, though you might perhaps allow me to build the bridge, you would not like the trouble or expense of getting boards for me to make a centring for myself; besides, I was not sure that I could make it all myself."

"Well, Harry, since I cannot admire your prudence, I am the more satisfied with your honesty. Now what assistance do you want for your bridge? consider, and let me know to-morrow."

"I have considered already, father," cried Harry, "and, if you please, I can tell you all to-day, and this minute. Stones in the first place, and I know where they can be had, and where they are of no use; in the ruins of the old garden wall, which is now rebuilding of brick."

"Granted, as many of them as you want and can carry," said his father.

"But there are some too heavy for me," said Harry. "Will you order the boy and the ass-cart to bring them?"

His father assented.

"And will you order for me lime and sand enough for mortar?"

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"If you can tell me how much of each you want, Harry."

He could, for he had inquired from the mason how much had been used in building the bridge of the same size, and he named the quantities. Then he had farther to ask for a bucket, a hod, a trowel, and a plumb-line, and the mason's centring, and the mason or the mason's man, if he could be had, for three days, to assist him in lifting and placing the heavy stones.

Lucy held her breath with anxiety while Harry uttered all these requests, fearful that so many at once could not be granted; but her father was pleased by Harry's making them all at once, and by his having so well considered what was necessary for his undertaking. Bucket, hod, trowel, plumb-line, and centring, all were granted: but there was a doubt with respect to the mason, or the mason's man.

"I am willing to give you all necessary assistance of hands, but not of head, Harry. I cannot let you have the mason, but I will lend you for three days the mason's man, who, if I mistake not, has hands but no head."

"I am glad of it, father," cried Harry; "I mean, so much the better for me, because, if he had ever so good a head it would be in my way; it would hinder me from using my own. Then I should not learn, as you said, from my own experience. I would rather do all that I possibly can of my bridge for myself. I am sorry the arch is not my own, but that could not be helped, you know, father, on account of the centring."

"However, just the curve of the arch does not much signify, I suppose," said Lucy. "One shape, one curve of an arch, is much the same, or as good, as another, though not so pretty, perhaps."

"There you are quite mistaken, Lucy," said her father. "One curve, on the contrary, may be as pretty, but not as good as another, not as capable of sustaining weight, not as durable. There is a great deal of difference between one curve and another for a bridge, as Harry, when he has more knowledge of science, will be able to explain to you."

Harry again expressed his regret that he had this arch laid out ready to his hand.

"In short," said he, "now the most difficult, the most scientific part is done, and I have only to do the

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easy, mason-work part, which anybody can do without making any mistakes, or requiring any ingenuity."

"There is no danger, Harry, of your not finding sufficient difficulty before you have done. There is room enough left, I promise you, to make mistakes, and to exercise as much ingenuity as you possess."

Harry brightened up again on hearing this, and so did Lucy.

"The more difficulty, the more glory," said she.

As soon as all was provided, which was not quite so speedily as Lucy wished, Harry set to work; first he cleared and levelled a place on the bank on each side for his foundations. Then, while the heavy stones were drawing up by the ass, he was busy, very busy, making mortar, with the assistance of the man *without a head*. The great foundation-stones were then placed, Harry taking particular care to choose the most solid, weighty stones, and to have them laid level and firm. Then came the wooden framework, that was to support the mason-work while they were building the arch—the centring, as Lucy knew that it was called, and she would have liked to have examined it, but she would not interrupt Harry at this moment, for he was eager to have it put up, and to get on with the work. Therefore she stood by without interrupting the operations by question or remark. The centring was hoisted up and fixed by Harry and the headless man, whose hands and length of arms were, it must be acknowledged, of manifest use upon this occasion. The wooden arch was raised to the height at which the stone arch was to be built upon it; and it was supported at each side by upright props. Between these and the wooden frame, wedges were put in; and Harry, busy as he was, stopped to explain to Lucy that these wedges were to be knocked out when the bridge was completed, and that the wooden arch being removed, would, as it was to be hoped, leave the stone one standing firm.

Then the building of the arch began. We cannot follow the work, stone by stone, as Lucy did, with untired sisterly sympathy, not only stone by stone as each was placed, but as they were many a time displaced, and tried over and over again before they fitted. To Lucy's surprise and mortification, she observed, that even the stupid mason's man, by long practice, could judge better which stones would best fit, and how they

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would best go into certain places, than Harry could with all his quickness of eye and sense. This was most apparent the first and second days; on the third, after even this little practice, Harry found his eye and hand improving, and his sense began to get the better of his awkwardness at his new trade. After this third day's long, and hard, and hot labour, the arch rose from each side till it nearly met at top, and wanted only the putting in of the last stone, the key-stone, to complete the work. Harry showed Lucy, that when this was put in, all the parts of the arch were pressed together, and that none could give way without displacing the others; each part tended to support each, and to hinder any stone from being pressed upwards or downwards more than another.

"So it is impossible it should come down as long as it is an arch," said Lucy.

"As long as it is an arch, impossible," said Harry. "All we have to desire is, that it should never alter from this shape; and I do not see how it can," continued he, looking at it; "my butments are so secure, there is no danger of their giving way or being thrust out by any weight that will go over the bridge."

"Now then," said Lucy, "you will take away all this wooden under-bridge, and these props, and you are to knock out the wedges, that you may take down the centring, now the bridge is finished."

"Not yet," said Harry, "we must leave it some time for the stones to settle, and the mortar to dry a little."

Lucy's impatience yielded to her brother's prudence, but he was very eager himself for the taking down of the centring. That trying time at length arrived, an anxious moment even to old experienced architects, veteran bridge-builders. The wedges were knocked away—the props fell—the centring was lowered and withdrawn from under the arch—and it stood! Harry took breath, and pushed back his hat off his hot forehead. Lucy clapped her hands, exclaiming—

"It stands! Harry's bridge stands. It shall be called Harry's Bridge!"

"No, My Mother's Bridge," said Harry, "if you please. It was for her I built it."

"And I will run and call her to see it," cried Lucy.

"And I will go for my father," said Harry. "I hope he is not busy."

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Neither father nor mother was to be found in the house. They were out riding, and they stayed out till it was so late, that Harry and Lucy thought it was better not to ask them to look at the bridge till the next day. Their mother had never yet seen even the plan, she was not in the secret. They hoped that she would be delightfully surprised. It was settled that she should be invited out to look at it early the next day. She was, as they arranged it, to be handed over the bridge by Harry, to a seat which Lucy had prepared in a recess in the rocks, on the opposite side, where she might sit and read happily.

Alas! who can answer for to-morrow. The next day it rained, and the next, and the next poured torrents. The rain lasted without intermission a week, a long, melancholy week!—for in Rupert's Cottage they had not the same means of amusing and employing themselves which they possessed at home; they had but few books, and those few belonged chiefly to their Latin or English lessons. Their father and mother had been promised the use of the library of a friend who lived in the neighbourhood, and, upon the faith of this promise, they had brought scarcely any books with them. But their friend, unexpectedly called to town upon business, was, unfortunately for them, absent; there was no circulating library, no book society, in this part of the country.

There was one advantage, to be sure, in possessing but few books; these were well read, and many things found in them which had escaped attention when in the midst of greater variety. At last they were reduced to Johnson's Dictionary; not the delightful quarto, in which there are quotations from all the best authors in our language, exemplifying the various uses of each word: with the *great* Johnson they might have happily amused themselves at night, reading those quotations, and puzzling their father and mother, by making them guess the authors. This had often been a favourite resource at home. But now they had the little octavo Johnson, in which there are only the meanings and the derivations of the words. Of this, however, they made what profit and diversion they could. They picked out words for each other to explain, and compared their own explanations with definitions in the dictionary.

"Now, Lucy, I will give you a woman's word, *to*

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darn," cried Harry. "Let us see whether you can explain the meaning as well as it is explained here by a man."

Lucy made many attempts, her colour rising at each ineffectual trial, and at last she could not equal *the man's* definition of to darn,

"To mend holes by imitating the texture of the stuff."

Lucy had her revenge, when they came to network, which is thus described by the learned doctor:—

"Any thing reticulated or decussated at equal distances, with interstices between the intersections."

"Look for *decussate*," said Harry.

Lucy turned over the leaves and read, "Decussate, to intersect at acute angles."

"Well, that is something like netting," said Harry.

"Is it? how?" said Lucy.

"Why, you know," said Harry, "in a net, each mesh or stitch is intersected, is it not? at acute angles."

"But it is not intersected," said Lucy; "for to intersect means to cut in two, does not it? and the mesh of the net, instead of being cut in two, is joined at the corners. Is it not very extraordinary that the man should say the very contrary to what he means, and to the sense of the thing?"

"It would be very extraordinary if it were so," said cautious Harry; "but I think to *intersect* does not always mean to cut in two. I know in Euclid, lines are said to be intersected when they are only crossed."

On turning to the dictionary, Harry found himself supported in his assertion, for there are two verbs *to intersect*. One is a verb active, meaning "to cut, to divide each other. The second is a verb neuter, and means what I told you," said Harry; "to meet and cross each other; as in your net the threads do meet and cross at the angles."

"Yes," said Lucy, "but they must do more, not only cross, but be tied and knotted. I wish," continued she, "that dictionary-makers would use easy words, instead of words more difficult than those they are explaining, at least when I am as sleepy as I am now. I can look for no more words, so good-night, Dr. Johnson, I am going to bed."

"Let me put him away for you," said Harry; "poor creature, you are fast asleep."

As he went to put Johnson in his place, he saw

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another dictionary, by Dr. Ash, on the same shelf, and, taking it down, said he had a mind, before he gave up the search, just to look in this for network.

"It will do you no good," said Lucy; "all the dictionary people since Johnson's time have copied from him, mamma told me so; and she told me a droll story, which proves what bungling copies they sometimes make. But I am too sleepy to recollect it rightly. Mamma, would you be so good as to tell him about curmudgeon?"

His mother asked him if he knew what is meant by a curmudgeon.

"Yes, a cross, selfish, miserly person, is not it?"

"And can you guess from what the word is derived, Harry? It is but fair to tell you, that it is a corruption of two French words, ill pronounced."

"French words!" said Harry, "then I have no chance. If you had said English words, I might have said two that just came into my head."

"Oh! say them, for I am sure they are odd by your look," said Lucy, wakening with the hope of diversion.

"*Cur munching*," said Harry; "say it quickly, and it will make curmudgeon. And a cur munching is cross and miserly, if you attempt to take his bone from him."

Lucy laughed, and tried to repeat cur munching as often and as quickly as she could, to turn it into curmudgeon for Harry; and his mother wrote down for him the derivation, as it is given in the quarto edition of Johnson's Dictionary.

"Curmudgeon, n. s. [It is a vicious manner of pronouncing *cœur méchant*, Fr. An unknown correspondent.]"

"Now here is Ash's Dictionary," cried Lucy; "I will look for it, I am quite awake now, mamma. But stay; first, Harry, tell us what you think is meant by 'Fr. An unknown correspondent.'"

"Fr. means French, to be sure," said Harry; "and an unknown correspondent sent Johnson this derivation, I suppose."

"You suppose perfectly rightly," said Lucy; "but now look how Dr. Ash understood, or misunderstood it, for want of knowing the meaning of the two French words. Here it is."

"Curmudgeon, noun sub., from the French *cœur*, unknown; *méchant*, correspondent."

"Excellent!" cried Harry, laughing; "let me see it."

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"Oh, mamma, can you tell us any more of such droll mistakes," said Lucy; "I dare say there are a great many more, if one could but find them; and I should like to make a list of them all."

"To shame the poor dictionary-makers," said Harry. "But that would be very ungrateful of you, after all, Lucy; for consider how often dictionaries have helped us when we were in difficulties; and how much amusement we have had from Johnson's quotations."

"In the *great* Johnson; oh! I acknowledged that at first," said Lucy; "and you forget this curmudgeon mistake was not your dear great or little Johnson's, so I am not ungrateful."

"But you know you triumphed over him when you had him caught in your network," said Harry.

"Because of his hard words," said Lucy.

"Lucy," said her father, "did you ever hear the fable of Apollo and the Critic?"

"No, papa; pray tell it to me," said Lucy; "I love fables."

"Are you awake enough to hear and understand it?" said her father.

"Yes, papa, perfectly; wide awake: curmudgeon and the munching cur have wakened me completely."

"There was a famous critic, who read a famous poem for the express purpose of finding out all its faults; and when he had found them and made a list of them, he carried his list and his notes to Apollo. Apollo ordered that a bushel of the finest wheat that had ever grown on Mount Parnassus should be brought; and he ordered that it should be winnowed with the utmost care; and when all the corn was separated from the chaff, Apollo presented the chaff to the critic for his reward, and banished him for ever from Parnassus."

"Thank you, papa," said Lucy; "I understand the moral of that fable very well; and I think I had better banish myself to bed now. Good-night, Harry; I hope it will be a fine day to-morrow."

It was a fine day; all the dark clouds had disappeared, and left the sky clear blue. The sandy soil had dried so quickly, that Harry and Lucy flattered themselves that their mother would walk out this morning, and they ran to prepare her seat beyond the bridge.

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But, oh! disappointment extreme!—oh! melancholy sight! The bridge was no more: nothing remained of the arch but some fragments, over which the waters were rushing. The mountain stream, which had been swelled by the rains to a torrent, had not yet sunk to its natural quiet state; but was dashing down the rock with deafening noise.

Harry stood motionless, looking at it.

"I do not hear you, my dear," said he, as Lucy twitched his arm to obtain an answer: "What do you say?"

"Come a little further away from this noise," said Lucy. "I say that I am exceedingly sorry for you, Harry."

"Thank you," said Harry; "so am I sorry for myself, but sorrow will do no good."

"How could it happen, when you took such care about the butments?" asked Lucy.

"I did not take care enough," said Harry, "that much is clear; but it is not clear to me how it all happened, or why! The water covers every thing now; it runs, you see, over the banks beyond my foundations. We must have patience."

"Oh, how hard it is to have patience sometimes," said Lucy, with a deep sigh.

Harry could not forbear echoing her sigh, though he passed it off with a *hem* immediately, thinking it was not manly. He was determined to bear his disappointment like a man, but he could not help feeling it.

In the evening, when the waters had subsided, they revisited the place of their misfortune. While Harry surveyed the ruins below, and examined into the cause of the disaster, Lucy stood on the bank, looking alternately at his countenance and at the fragments of the fallen bridge, in all the respectful silence of sympathy.

"I see now how it happened," said Harry. "Though I made my butments strong enough, I did not go down to the solid rock for my foundations. I built them on the bank, which I thought at the time was firm enough."

"So did I, I am sure," said Lucy; "it was as firm and hard as the ground I am now standing upon."

"But it was all sandy soil, as you can see here, where it has been broken away," said Harry; "and I perceive exactly how it happened. When the rain

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swelled that mountain torrent, the water came higher under my arch than I ever expected."

"Who could have expected it?" said Lucy.

"There was not room for it to pass underneath," continued Harry, "and therefore it pressed against the sides of the arch, and rose up over the banks. Then the earth and sand were loosened, the foundations were undermined, the stones were swept away, and then down fell our arch."

"Poor arch! poor Harry!" said Lucy. "That horrible mountain torrent! how violent it was. Who could have thought it, who had only seen it running gently in its peaceable way? But it is all over; we can never have a bridge here; we must give it up."

"Give it up, because I have made one mistake!" said Harry, "and when I see the cause of it! Oh, no; if my father will but let me try again—and here he is, and I will ask him," cried Harry.

His father, who had heard of his misfortune, was coming to condole with him, and to inquire how it had happened. Harry showed him. "You were quite right, father," said he, "in foreseeing that I should find room enough to make mistakes; and so I have, you see. But this was my first attempt, and now I have learned something by experience; will you be so kind as to let me try again, and let me have the assistance of the mason's man for three days more?"

Three days more of a labourer's work, at two shillings a day! Some people would consider this a great deal too much to give to the *mother's bridge*, or rather to the *son's bridge*; but Harry's kind father did not think so. He was pleased to find that his son was not discouraged by disappointment, and that he had immediately set about to discover the cause of his failure; and he told Harry that he should have the mason's man for three days, to make a second trial, upon the same conditions as before.

"And will you help me, father, to find a better place for my foundations? Will you, father?"

"No, Harry; do it all yourself."

He would give no opinion or advice: he pursued his walk to the wood, and Harry was left to determine his plans. After much careful deliberation, he decided on a place a little higher up the stream, where the foundations of his butments would stand upon the solid rock,

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so that no treacherous sand or loose earth should be washed away by the torrent, and again expose them to be undermined.

After settling this point, and measuring the span and other dimensions, he repaired to the seashore, to draw the plan and elevation of his second bridge. The stream being rather wider, and the banks much higher, in the new situation that he had chosen, it was clear that the arch could not be the same as the first; and at this he seemed to rejoice, and so did Lucy; for "now it would be all his own." He described arches of various curves on the sands; but he had no exact principle or rule to guide him in what he was about; he had a general notion, that the strength of his bridge must depend in some degree on the curve, or the proportion between its span and height; and that the weight and pressure it was to bear on its different parts should be calculated. But how to accomplish all this, or how to choose the best curve for the situation, he did not know. He could be guided only by his eye, by a sort of feeling of proportion; by guess, in short. Lucy assisted him with her feelings and taste, as to which was the prettiest.

"My dear Harry," cried she, "that high-pointed arch is very ugly; it will never do: your first bridge was a much prettier curve."

"It must be this height, my dear," said Harry, "because my foundations are to be upon the rock, which is far below the bank. The top of my bridge will be but a little above the level of the path on each side, and when the bridge is built, I shall fill up the space between the sides and the banks with stones and earth, and then level the road over it from the path on each side." He drew the slope for her, and she was satisfied.

But now Harry had to consider the serious affair of a centring for his new arch. His father had said that if he could make one for himself he might do so, and that he would supply him with boards, if he could tell him exactly what he wanted. Harry fortunately knew what he wanted; but he was ashamed, when he came to write down all that would be necessary, to see how much it was.

"Twelve thin boards, each four feet long and nine inches wide; and three boards, six feet long, which are each to be slit into two parts for ties; and six uprights,

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of any pieces of rough wood; and nails, one hundred and a half."

His father seemed satisfied with these distinct orders, and told him that he should have all that he required. Next morning the carpenter and his boy arrived, bearing the wished-for boards on their shoulders. The moment Harry obtained possession of them, to work he went to make his centring. Flat on the ground he laid four of his four-feet boards, two forming each side of the pointed arch, and bringing their upper edges as nearly as he could bring straight lines to something like the curves which he had marked upon the ground. The ends of the boards were lapped over where they joined, and the corners were left projecting on the outside.

"It is not in the least like an arch yet," said Lucy.

"Have patience and you shall see," said Harry.

With all the decision of a carpenter who knows what he is about, Harry bored holes for his nails, and nailed the pieces together as they lay, three nails in each side joint, and four at the top. Then he nailed one slip, of one of the six-feet long boards, across his wooden arch at bottom, to hold it together, and another piece half way up to brace and strengthen it. Then he sawed off the jutting corners of the boards, which had been left sticking out, and chiselled and planed away parts of the outer edges, to bring them to the curves he wanted. Three such frames or wooden arches he made in the same manner, and exactly of the same size.

Then having determined on the proper breadth for his intended bridge, and having marked it on the ground by two parallel lines, and drawn another midway between them, he placed the frames erect on their lower edge, and exactly upon the three lines. With ready Lucy's assistance, and some broken branches, he secured them steady and upright, and then proceeded to roof them over with narrow slips of wood, bits of paling, which he had prepared for this purpose. These he nailed across the top of all the three arches, leaving intervals between, of the breadth of each slip: so that when the whole was done, Lucy said that it looked something like the model of the roof of a house.

This day's work completed the centring. Props, wedges, and all were prepared for putting it up, and going on with the masonry. There was no hinderance from the stream; the little rivulet, now sunk to insig-

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nificance, ran so quietly down its pebbly bed, that Lucy could scarcely believe it to be the same which had roared so loud, and foamed so high, and had done such mischief in its fury.

The mason-work of Harry's second bridge went on more rapidly than that of his first; his eye and hand having become more expert in the builder's art. "He worked, and wondered at the work he made;" or rather, Lucy wondered at it for him.

"How one improves by practice!" cried she, as she stood by, looking on, while the arch was closing. The keystone was in before they left off work on the fourth day, and the triumphant finishing blow of the mallet given.

But the work of the arch only was finished; much remained to be done to close up the hollow on each side of the bridge, between it and the banks. This was to be filled in with stones and earth, down to the rocky foundation. A heavy job, and heavily they felt it! The three days allowed them of help from the headless man, or, as Lucy now, in gratitude for his services, called him, the handy man, were passed. They were left to themselves, and obliged to bring the stones and the earth from a distance of many yards, and up a height. The handy man had carried his barrow off, and they had only one wheelbarrow and a basket, if basket it could be called, which was so infirm that it let through continual dribblings of sand. Lucy, however, mended this with a plaiting of seaweed and stuffings of moss, and refrained, as Harry was busy, from saying something she could have said, about the sieve of the Danaides.

When at last both gulfs were filled up and well trampled, and Harry was spreading gravel on the road over the bridge, Lucy had time to rest, for they had but one shovel; and while he shovelled away, she sat on a large mossy stone, amusing herself with observing a community of ants, whose dwellings had been disturbed by the new works. These emigrants were toiling on in search of new habitations, each with his white load in his forceps, all following the leader, through the moss, and up the stone, to them a rock of perilous height, and scarcely practicable ascent. Once, when a wayworn ant had just reached the summit, a white, polished, treacherous pebble intervened. He raised one half of his body so as to be almost perpendicular, and wabbling about his

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little head from side to side, deliberated which way he could go, or whether he could go at all. On he went straight up the slippery hill. On the pinnacle of the white pebble, another pinnacle arose of sparkling mica, whose projecting points proved fatal. Striving to reach the first of these, he lost his balance; he fell head over heels, if ants have heels, and at the bottom of the hill lay on his back on the sand, for a moment helpless. But the next instant, being an ant of spirit, he righted himself, resumed his load, and his labour up the hill. Labour in vain: this time a treacherous rush, more treacherous than the pebble, a springy green rush, or branch of sedge, hanging from above, tempted him to trust himself on its smooth green side. But

"The wind fell a blowing, and set it a going,
And gave our dear joy a most terrible toss."

Lucy held out a helping finger, and raising him up, placed him safely at once upon the very pinnacle he had been so long labouring to attain. Away he ran, as she hoped, perfectly happy. She was particularly pleased with him for this; because she had sometimes helped up ants which had not seemed in the least obliged to her for her assistance, nor at all happier for it; but, on the contrary, by turning back directly, or not going the way she wished, had provokingly given her to understand that they would rather have been without her interference. In spite, however, of these incivilities, and of the little disgusts they had at the moment excited, her love for the species had continued. It had, indeed, commenced happily in early childhood, at the time when she and Harry used to watch them making their causeway, and by reading the "Travelled Ant," in "Evenings at Home;" it increased when she read, with her mother, that entertaining paper in the Guardian, well known to young and old; and it had been of late renewed with fresh interest, by some curious anecdotes which her mother had told her from Huber's history of the industrious race.

"Harry," said she, taking up her basket again, "I feel quite rested; I have been very happy looking at these ants. I am sure this has rested me better than if I had been the whole time yawning, and thinking of nothing at all."

"Pray, *can* anybody think of nothing at all?" said Harry.

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"Let everybody answer for themselves," said Lucy. "I think that I have sometimes thought of nothing at all, but I am not sure; yes, indeed, I remember saying to myself, 'now I am thinking of nothing.'"

"But, then, my dear Lucy," said Harry, "your own very words prove you were not thinking of nothing."

"How so?" said Lucy.

"You were thinking that you were thinking of nothing at all," said Harry.

"I do not understand," said Lucy. "Is not that nonsense, Harry?"

"Oh no, my dear; it is metaphysics," said Harry.

"And what do you mean by metaphysics, my dear?" said Lucy.

"It comes from two Greek words," said Harry.

"But I do not ask you where it comes from," said Lucy, "but what you mean by it?"

"I—" said Harry, a little puzzled, "I mean—I am not sure—I believe metaphysics is the knowledge of our own minds."

"But if we do not know our own minds," said Lucy, "of what is it the knowledge? will you tell me, Harry?"

"I cannot tell you more," said Harry; "I will look for metaphysics in the dictionary when we have time; but now let us go on with our bridge."

The striking of the centring was as anxious a moment for Harry, in his second bridge, as it had been in his first; more so, indeed, for this arch was all of his own construction. Cautiously he withdrew the wedges, and lowered the centring some inches. A clear space between it and the stone arch appeared, through which Lucy, as she stood low down on the bank of the rivulet, could see, and perceiving that the bridge now stood unsupported, she ran up to Harry rejoicing.

"But you are not satisfied, Harry! Why do you stand so silent? What are you looking at?" said she; "what do you see?"

"I see something that I do not like," replied Harry; "I see some cracks there at the *haunches*, at the sides of the arch."

"Very little cracks," said Lucy.

"Them bees only from the settling of the work, master," said the handy man, who had come to help Harry

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to take down the centring. "I dare to say it will crack no more when so be that it bees all settled. It is right good mason-work as hands can do, and it will stand as long as the world stands, I dare say."

"I dare say it will," repeated Lucy, glad, as we all are, especially on subjects where we are ignorant and anxious, to catch at the support even of a *dare-to-say* from a headless man. Harry, without listening, jumped down to examine his foundations, and came up again with a calm, satisfied look. "My butments are safe, they cannot be forced away, they cannot be thrust out. We may take down the centring and carry it quite away, carry it to the house; I promised my father to return the boards."

"And I may run home and call papa and mamma to see the bridge standing alone, in all its glory," said Lucy.

She went; but long Harry waited for her return. Once he thought he heard a carriage: too true! a provoking carriage; the first, since they had come to Rupert's Cottage, that had arrived. Lucy returned breathless.

"Mamma advises you, Harry, to come in."

"Does she, indeed?" said Harry, much disappointed; but recollecting what had happened the last time he had neglected a summons of this sort, he immediately turned his back on his bridge, and followed Lucy. She was desired not to tell him who the visiters were, and he did not care, he said, he did not want to know their names; they must be strangers, and of strangers, one name was to him the same as another. He could have wished to know how many people there were, but Lucy seemed to consider it her duty not to answer his question, and Harry forbore to repeat it. Though he had conquered his original habits of bashfulness sufficiently to be able to face strangers without much visible repugnance, yet still he felt an inward reluctance. Nevertheless, courageously he turned the lock of the door, and entered the sitting-room. To his relief, for it must be confessed, notwithstanding his intrepid entrance, it was a relief to him, he found that there was not what he dreaded, a formal circle. There were only two people; an elderly gentleman, whose countenance was benevolent and sensible, and a lady, seemingly some years younger, of an engaging appearance. Harry liked his first look at both,

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and Lucy liked their first look at him. He studied them, as he stood beside his mother's chair. He perceived that she and his father liked them; that they certainly were not new acquaintances, more like old friends. Aiding his remarks on physiognomy by listening to the conversation, he presently discovered that Rupert's Cottage, and all that it contained, of furniture at least, belonged to them; that they were the persons who had promised the use of their library; and that the performance of this promise had been delayed by their absence from home, and by a housekeeper's mistake about a key. The library, however, was now open, and books and every thing at Digby Castle was at their service. At last the lady's name came out, Lady Digby; and the gentleman's, Sir Rupert Digby.

"Now," thought Lucy, "I know why this is called Rupert's Cottage."

Something was said about the pleasure of a former meeting last summer, and Lucy then whispered to Harry,

"These are the nice shipwreck people, I do believe."

"Nice shipwrecked people! Where were they shipwrecked?" said Harry, "on this coast?"

"No, no, not that I know of; I only mean they were the morning visiters the day of the puddle and pump, who told the story of the shipwreck," said Lucy.

Harry understood by this time what she meant; and much did they both wish that something would turn the conversation to shipwrecks; but though they got to the sea, it was only for sea-bathing; never farther than to a bathing-house. Then Sir Rupert and their father began to talk of public affairs: no chance of shipwrecks! Unexpectedly, Sir Rupert turned to Harry, and, in his mild manner, said,

"I am sure you must wish us away."

"No, sir, I do not," said Harry.

"Indeed!" said Sir Rupert, smiling.

"I did, when I first heard the sound of your carriage," said Harry; "but not since I have seen you."

"And I know why you wished us away when you heard the first sound of our wheels," said Sir Rupert. "I heard something of a little bridge, which your mother was going out to see, just as we came in. Why should not we all go to look at it? Pray take us with you: I am interested about it for our own sake, you know. If it

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should stand through the winter, as I hope it will, next summer, when we come to this cottage for sea-bathing, Lady Digby and I may profit by *the mother's bridge*; you see I know its name already."

Lady Digby rose immediately to second Sir Rupert's proposal. While Lucy went for her mother's bonnet and shawl, Harry ran on before, to set up a red flag, which she had made for him, in its destined place, at the right-hand side of the bridge. Knowing what her brother was gone to do, and anxious that he should have time to accomplish his purpose, she rejoiced at every little delay that occurred on their walk. She was glad when her mother stood still to look at the flapping flight of a startled seabird; glad when Lady Digby stopped to admire the growth of her favourite myrtle; glad when Sir Rupert slackened his pace, to tell the history of a weeping birch-tree, which he had planted when he was a boy. But by the time this was ended, she began to think Harry must be ready for them, and grew impatient to get on to that turn in the walk where she expected the first sight of the flag of triumph; but no red banner streaming to the wind appeared. She saw several men standing near the bridge, and she ran on to see what they were doing, and what delayed the hoisting of the flag. When she came nearer the spot, she saw that the people had gathered round the ass-cart. The ass had taken an obstinate fit, to which report said that he was subject, and no power could now get him over the bridge, though he had crossed it once with his empty cart. His leader, Dame Peyton's son, a good-natured boy, who was very fond of him, prayed that he might not be beaten, and undertook to get him on by fair means in time; but the ploughman had become angry, it being now near his dinner-time, and he began to belabour the animal with his oaken stick. Harry stopped his fury, and declared that he would rather the cart never went over his bridge, than that the ass should be so ill used. The ass stood trembling all over, the boy patting him, and cheering him, and engaging for him; and the ploughman resting upon his stick, sulkily muttering, that while the world stood he would never get the obstinate beast over again without a good cudgel. It was just at this time that Lucy came up, and Harry put into her hands the flag of triumph, telling her that they had been obliged to take it down, because they thought it frightened the

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ass. All manner of coaxing words and ways were now tried on donkey, by little Peyton and Harry, alternately and in conjunction, but all in vain. His foreleg, indeed, he advanced, but farther he would not be moved. By this time Sir Rupert and Lady Digby, and Harry's father and mother, had arrived, and as soon as they saw what was going on, or rather what was not going on, they commended Harry's forbearance and patience, and were inclined to think that it was not, as the ploughman pronounced, *sheer obstinacy* in the ass, but that he might have some good and sufficient reason, or instinct, for his refusal. Harry's father, standing on the bank where he had a view of the arch of the bridge, observed the cracks which had first startled Harry, and which now were more alarming; for, as even Lucy could not help acknowledging to herself, they had opened wider. In one place, about two feet from the keystone, just at the turn of the arch, there was a crack half an inch open, and zigzagging through all the mason-work, the mortar giving way, and the stones separated.

"This is a bad job, my dear Harry," said his father.

"It is, father," said Harry. "I am glad they did not force the ass over."

"I am glad *you* stopped them, my dear," said his mother.

Sir Rupert Digby now coming up, told Lucy that he had seen an elephant in India refuse to go over a bridge after he had once put his foot upon it, knowing by his half-reasoning instinct that it was not strong enough to bear his weight. "No blows or entreaties," he said, "can force or prevail upon an elephant to attempt to go over a bridge that will not bear his weight. The masters, and the engineers and architects, may be mistaken in their calculations, but he never is."

Harry asked his father what he thought could now be done to strengthen his bridge, since it seemed it was not strong enough even to bear the ass-cart.

"Mamma," said Lucy, "even if Harry's bridge will not do for carts or horses, it will do perfectly well for foot-passengers, for you and me, mamma, do not you think so? Since it bore the weight of the ass-cart once, it would bear mine, I am sure—I should not be afraid—much—to try. I will go over it, shall I, Harry?"

"No, no," said Harry, catching hold of her, "pray do not."

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"No, I desire you will not, my dear Lucy," said her father, "till it has been determined whether it is safe or not."

"And how shall we do that, father?" said Harry, anxiously.

"You shall see, Harry."

His father ordered that the ass should be released, and that the cart should be filled with stones. Then he desired two of the men who were standing by to roll this loaded cart by the shafts, as they would a wheelbarrow, up on the bridge, and to empty it on a spot which he pointed out to them. This they could do without going beyond the sound part.

"Oh, papa!" cried Lucy, "it will all come down—what a pity!"

"We must try the bridge fairly, my dear," said her father, "by putting as much weight on the weakest part as it is ever likely to have to bear. If it stands this, you may safely go over it afterward. If it fail, Harry will, at least, have the satisfaction of knowing that no human creature will be hurt or endangered."

"Thank you, father," Harry would have said, but the thundering noise of the emptying of the stones forbade. All his soul was in his eyes, and fixed upon the crack. It opened more and more, and a new crack appeared; the sides of the arch having been pressed inwards by the great weight placed upon the haunches, forced the crown of the arch upwards; and though the keystone, with one or two stones on each side of it, were held together by the mortar, yet the weight of earth on the sides had pushed most of the others out of their places, and the whole bridge hung in a perilous state!

"Oh! poor Harry's second bridge!" cried Lucy. "Oh, mother! are not you sorry for him?"

"Very sorry indeed, Lucy! especially as he bears it so well," said his mother, looking at him as he stood collected in himself and resigned.

"Thank God, nobody has been hurt by it," said he.

"The other side is safe still," said Lucy, "there is a pathway there broad enough; could not that do, and could not this be repaired?"

"No," said her father; "it will be better to make a new one, or to have none at all. At all events, this bridge must not be left in this condition. It might tempt

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people to go over it, and they might meet with some accident."

"Oh! father, let it be taken down," cried Harry, "I will help to pull it down myself."

"That would be too hard upon you, Harry. It shall be taken down for you," said his father.

He gave the necessary orders, and the work commenced. Lucy turned away, unable to stand the sight of the total demolition of Harry's bridge. Her sympathy comforted him, and he looked gratefully towards her.

"What I think most of, father," said he, "is all the expense you have been at for me for nothing, all wasted!"

"I do not consider it as wasted, Harry," said his father; "for it has amused and employed you, and has taught you something, I hope."

"Certainly," said Harry. "My first bridge taught me to take care of my foundations. You see I did not make the same mistake again, father. There are my foundations safe and sound upon the rock this minute, look at them; if that would do me any good," added he, with a sigh.

"And what have you learned from your second bridge?"

"From my second misfortune I have learned not to put too much weight on my haunches, and to put more on my crown," said Harry.

"Yes, it was all that weight of wall and earth over the sides of the arch that *pippinsqueezed* the keystone up and out," said Lucy. "But, Harry, you know you could not help filling up the hollows between the banks and the arch; you might, to be sure, have made your arch lower."

"Yes, as you said at first, when I drew it on the sand; Lucy, my arch was too high for its breadth, that made it weak; I wish I had taken your hint."

"But I only said so from a sort of feeling," said Lucy; "I had no reason. How much lower would you make it if you were to try again?"

"I do not know," said Harry, colouring as Lucy pronounced the words, try again. "I have not thought of that; I should be ashamed to ask my father to let me try again, it would be too much."

"I should not think it too much, Harry," said his

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father, "if it would do you any good; but I do not think it would. You have learned something by your failures, and you have acquired some little practical skill in handling a trowel, and in stone-building, but you are not to be a mason."

"I only want to know how to build an arch which will stand," said Harry, "and I cannot bear to give up till I can learn that."

"I like your spirit of perseverance, my young friend," said Sir Rupert.

"So do I," said his father; "but I would not have it wasted."

"When a common mason can build an arch that will stand, why should not I?" said Harry; "for there is the mason's bridge standing now, and heavy coal-carts going over it every day; more weight a hundred times it bears than this single load of stones, which overthrew my poor weak arch. Why should not I, by practice and trial, succeed?"

"The mason succeeded because he took advantage of the experience of others, and of the knowledge of men of science. The mason works as a tradesman merely, without knowing the reason or theory of what he does."

"That would not satisfy me," said Harry.

"Then, to satisfy yourself, whether you could do any better," said his father, "let me ask you, as Lucy did just now, if you were to try again, what would you do? Build your arch lower, you say, and put more weight on your crown and less on your haunches; but how much lower, how much less weight on one part, how much more on another; can you calculate, can you determine all this? Whenever you can satisfy yourself, Harry, that you can do this, that, in short, you can build a bridge that will stand, and not again disappoint you, I will give you any assistance you want for its construction."

Lucy's eyes brightened.

"Thank you, father, I cannot wish for more," said Harry. "Now I must make out the rules for building arches. They must be in some books," added Harry, looking at Sir Rupert Digby.

"Any books that I have, which can assist you, are at your service," said Sir Rupert. "In a volume of the Edinburgh Encyclopedia, I know there is a highly-es-

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teemed essay, both upon the practical and the theoretical parts of bridge-building. I will send it to you as soon as I can, after I go home."

"Thank you, sir," said Harry, joyfully. "I only hope I shall be able to understand it."

"I will not answer for that, Harry," said his father, smiling.

"At any rate," said Sir Rupert, "you will find some things in it that will entertain you both."

Sir Rupert seemed greatly pleased by the good-temper with which Harry had borne his disappointment, and by his eagerness to persevere and improve himself. He talked to him during their walk home, gave him an account of a famous bridge in Wales, the bridge of Llantrissart, which had been built several years ago by a self-instructed mason, who persevered after it had been carried away twice by the mountain torrents; and at last, the third time, he succeeded, as it is said, by leaving cylindrical holes through the haunches of his bridge to lighten them. Then he talked to him of some other bridges of a new construction, some which have lately been made, others which are now making—suspension bridges; in these the whole bridge hangs suspended from raised piers.

When Sir Rupert was going away, as he drew up the carriage window, he said to Harry,—

"I shall not forget the book for you, I hope. But if I should, here is one who never forgets any thing that concerns me or my friends; Lady Digby will take care that you have what you wish."

"As soon as possible," said Lady Digby, bending forward from her seat in the carriage, and giving Harry a promissory smile.

Harry calculated that "as soon as possible" might perhaps be to-morrow; but, to his surprise and joy, this evening, as they were going to tea, in came a large parcel directed to him. It had been brought by Dame Peyton's daughter, who had been to the castle, and had returned by the *short cut*, along the mountain path. It had been put into her hands, she said, by Lady Digby, her ladyship's own self, who charged her to come up and deliver it directly, and not to leave it at the gate-house till morning. She thought, that is, her ladyship thought, the young gentleman would sleep the better for having it before he went to bed.

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"How very kind," cried Lucy; "and what a nice parcel! so neatly tied up too, with a bow knot, and directed in such a pretty hand!"

Harry allowed her the honours, or the pleasures, of unpacking the parcel.

But at this moment the whizzing of the tea-urn passing by warned them that this was no time for covering the tea-table with paper, packthread, and books.

So wonderfully was Harry improved, in the power of turning his thoughts from his own speculations to what was going on round about him, that three minutes after he had seated himself at the tea-table, he perceived a new guest, a tame bulfinch. It belonged to the housekeeper, who had the care of this cottage, and having by this time grown familiar with the present inhabitants, Bully sat quite at his ease, perched upon the sugar-tongs, singing in his own praise his evening song of pretty bully! pretty bully! bully, bully, bully! pretty, pretty bully!

Lucy was anxious that his jet-black eyes should be admired, and his soft, black, shining velvet cap and tippet, and his dove-coloured back, and flame-coloured or carnation-coloured breast. All these Harry admired to her heart's content, except that he could not in conscience allow the breast to be flame-colour, or carnation-colour either. In his secret soul, he thought it more of a brickdust hue. But this, he was aware, would not be a pleasing observation; therefore, without sacrificing his sincerity, he maintained a prudent silence on this point, and turned as soon as he could from the graces of Bully's person to those of his mind.

"What a confiding little creature he is! Though I am almost a stranger, he does not fly away even from me," said Harry.

As he spoke, he approached nearer and nearer to the bird, holding a bit of cake between his lips. This was rather a bold advance, and so did Bully feel it. When Harry's face came quite close under his parrot beak, Bully hopped sidewise a pace or two, and drew himself up in silence, keeping his beak closed; then turning his head many times quickly from side to side, he looked out from his protuberant little eye, suspiciously watching and listening at once. Harry kept his posi-

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tion steadily; and Bully, directing his eye askance upon him, seemed pleased with his observations, made up his mind, took his part decidedly, hopped upon Harry's wrist, and, to Lucy's delight, began picking the crumb of cake from his lips. He then flew away with a fragment of almond, to eat in peace his own way; and he finished it on the hearth-rug, within an inch of the dog, which was lapping his saucerful of milk; into which saucer Bully scrupled not to dip his beak and sip. Harry, having never before seen dog and bird on such good terms, pointed them out to Lucy with some surprise. This led to her telling him much more extraordinary instances, some of which she had read, and others which she had heard, of friendships formed between creatures usually supposed to be natural enemies. At one anecdote, though from high authority,* Harry demurred. A bird had been brought up along with a certain cat, with whom it ate, drank, and lived upon the best terms, till one day the cat flew at the bird, caught it up in her mouth, and carried it out of the room—to eat it, as everybody thought, and as Harry could easily have believed; but it seems that puss carried the bird off to protect it from another cat, a stranger, which had entered the room at the instant, and from whose evil propensities, of which she was well aware, she had thus saved her little friend and *protegé*.

"And can you believe this," said Harry, "of a cat? I could believe it of a faithful dog, but not of a selfish, treacherous cat!"

Harry had, as Lucy observed, taken up the common prejudice that cats are all false and treacherous. Her experience had led her to form a better opinion of the feline race; and she pleaded for them, that this anecdote was too well attested to be doubted. This led to many other anecdotes, pro and con; and to some observations upon evidence, and the reasons why we should or should not believe extraordinary facts or assertions. The conversation at last interested Harry so much, that he really forgot his arches and the Encyclopedia, till the tea-things were actually out of the room, and the last polishing rub given to the tea-table.

Then he returned to the book with fresh eagerness, and Lucy followed with fresh complaisance. Looking

* Miss Aikin's "Juvenile Correspondence."

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over his shoulder, she was, however, daunted by the sight of a number of *x*'s and *y*'s. "I am afraid I shall never understand any of this," said she.

"Nor I neither, I am afraid," said Harry.

"Stay, Harry, do not turn over this leaf; here is something I can understand, and a very curious fact too, that neither the Persians nor the Greeks knew how to build arches; at least, that no trace can be found of arches in any of their buildings. This book says that it is not ascertained, even yet, to what people we owe the invention. The Romans were the first who brought it into general use in their aqueducts for conveying water to their large cities, and in their bridges over great rivers, and in their magnificent temples."

Harry regretted that the name of the man who first built an arch had not been preserved; then turning to his father, he asked if he thought it had been regularly invented, or only discovered by accident? His father said he was inclined to think that this useful discovery had been the result of accident, observation, and invention, combined.

"Yes," said Harry, "perhaps in this way; a person may have seen some old building that had given way, where the stones might have so fallen upon each other, and so wedged, one between the other, as to give the first notion of the manner in which an arch is supported. I remember," continued Harry, "taking notice of something of this sort in a broken wall: I saw a heavy stone, which had fallen so as to wedge itself between three or four others, and made, as it were, the keystone of an arch; I think such an accident might have often happened, and might have given the first idea to other people. But to be sure I had seen an arch before, and unless I had, I should never probably have taken notice of the way in which those stones had wedged themselves."

"But," resumed Lucy, pursuing her own thoughts, "how very common arches have become in these days; even common, uneducated masons can build them."

"Yes, but only by imitation; by a model, or from a drawing or plan," said Harry.

"And though we made some mistakes," continued Lucy, "yet is not it curious, mamma, that, even at his age, Harry can do, in some way or other, what neither the Persians nor Greeks could do in any way?"

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"But, Lucy," interrupted Harry, "you must consider, that, even as far as I know, I have learned it all from other people; I did not invent it. If I had invented an arch, then indeed you might feel proud."

"Stay, stay! do not turn over the leaf yet," cried Lucy; "here is something I want to see about a bridge of rushes, in South America, over a river, between eighty and a hundred yards in breadth. It is made by laying bundles of rushes on four very large cables, stretched across, and made of a kind of grass. The army of one of the *Incas* was passed over this bridge; and it was of such prodigious use, that a law was made by the Inca that it should be repaired every six months. And here is an account of another kind of bridge in South America, called a *Tarabita*. It is made of a single rope of thongs of an ox's hide; or, as they call it, *Bujuco*. This rope is also stretched across the river, and is fastened at each end to strong posts on the banks. From this is hung a kind of hammock, just large enough for a man to sit in; a small rope is tied to the hammock, and men standing on the opposite shore pull the passenger in his hammock along the cable.

"But, mamma, only think of the poor mules! When a mule is to be carried over, they put girths under his body, and sling him up to a piece of wood, which slides along the great rope, and there he hangs till pulled to the other side. The first time a mule is lugged over in this way, he makes a prodigious kicking and flinging during the passage; and I am sure I do not wonder at it. But in time, these docile, patient creatures come of themselves to be slung, and when used to it they never make the least motion during the passage."

Lucy's father told her that, in this country, horses are every day slung in a similar manner, to be put into ships; and that rope bridges, on the same principle as the Tarabita, have been made in India as well as in South America, and are very useful in places where arches cannot be built.

"Do not you think, papa," said Lucy, "that the first idea of the sort of bridge Sir Rupert Digby was describing to Harry, was taken from the Tarabita?"

"Very likely, my dear," answered her father; "but I did not hear Sir Rupert describing the bridge; tell me what he said."

"I forgot that you were not walking with us, papa,"

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said Lucy; "it was a *suspension bridge*, as he called it, and—"

"My dear Lucy," interrupted Harry, "pray do not go on to the suspension bridge yet, because I want to talk to papa about it myself, by-and-by, if I find that I cannot manage my arch; but let me settle that first. Now, if you have done with the Tarabita, let me have the book quite to myself."

Lucy immediately surrendered it, saying, at the same time, "If you meet with any thing more that is entertaining, any thing more that I can understand, will you call me, or will you read it to me, Harry? I shall be only winding a skein of silk for mamma." After a short silence, Harry called to Lucy, "Here is a curious fact about the Chinese manner of building arches. Each stone, which is from five to ten feet long, is cut so as to form a segment, that is, a portion of the arch, and there is no keystone. Ribs of wood are sometimes fitted to the convexity of this arch, and are bolted through the stones by iron bars. This fact, of their doing without a keystone, reminds me of what my father said, that there is no mystery in the keystone. He laughed at me for the rout we made about it, as if there was something magical in it. He said that each stone might be considered as a keystone, if it were put in last; but that it was more convenient to load the wooden centres equably, by working from the butments up to the middle or crown of the arch."

Lucy returned to her skein of silk; and Harry, with his elbows on the table, and his hands over his ears, gave himself up entirely to Part the First of the Theory of Bridges.

In vain, utterly in vain. At last a heavy sigh, approaching to a groan, was heard from him.

"Father, I cannot make out what I want to know. I think you told me that when an arch is in equilibrium, it will bear almost any weight that can be put upon it; therefore I was very anxious to understand, first, what is meant by an arch being in equilibrium; and then I wanted to find out how to make it so. You told me that an arch is in equilibrium when the materials of which it is built are so placed that the pressure of their weight should be equal in all their parts. I understood that when the haunches were not too heavy, they would not press in, as they did in my poor bridge, and squeeze

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up the crown. I thought I understood clearly what you said, that as long as the butments are secure, and as long as no part of the arch changes its form, by being pressed up or down by the weight, so long, and no longer, its strength remains."

"So far, so good, Harry," said his father. "You understand so far well."

"Ah! father, but now comes the worst, the difficulty; *how* to build an arch in equilibrium. I said to myself, there must be rules for it, since people do it every day, and they must be printed, probably in this best of essays on the theory and practice of bridges. And so here are all the rules before my eyes; but, the misfortune is, I cannot understand them."

"Why, Harry? Why cannot you understand them?" said his father.

"Because they are all full of algebra and mathematics, and a number of terms which I do not understand. Cycloids, hyperbolas, intrados, extrados, and curves of equilibration, of all which I know nothing. Then suddenly I thought I should see the whole plainly at once, father, where it says,

"'The stones or sections of an arch, being of a wedge-like form, have their tendency to descend opposed by the pressure which their sides sustain from the similar tendency of the adjoining sections; should this pressure be too small, the stone will descend; should the pressure be too great, the stone will be forced upwards.'

"Now the very thing that I want to know for my bridge is how to make the pressure just right," continued Harry: "but when I hoped I had just got at it, all was lost to me again in a crowd of *a b*'s, *x* and *y*'s, and sines and tangents, and successive angles of inclination, and then it ends with—'Let us go back to the geometrical construction,' and so there I am left as wise as ever, or as foolish; for I cannot get on one single step further."

"For want of what, Harry?" said his father.

"For want of geometry, father: for want of knowing something more of mathematics. But could not you, father, put the rules for me in plain words, without algebra or mathematics?"

"Impossible, my boy; without your understanding mathematics, I cannot explain further to you. It is put there as clearly as it is possible; and it is not the

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fault of the explainer if you cannot understand it. But consider, Harry, this was not written for youngsters like you, but for men of science, who have acquired all the necessary previous knowledge."

"Men of science," repeated Harry, thoughtfully; "those men of science must, at some time of their lives, when they were youngsters, father, have been as I am now, I suppose; and I may be, if I work hard and get the knowledge, as they are now. Then I *will* learn mathematics. There is nothing else for it. I will set about it in earnest. The want of this knowledge meets me everywhere, and stops me short in the most provoking manner. I remember in the dock-yard, about the shape of the ship, and the sails and sailing, I was told perpetually, you cannot understand that for want of mathematics. And now I must give up building my arch, all for want of mathematics."

"Give up building the arch!" cried Lucy; "then you will give it up, after all."

"I must," said Harry.

"I thought you would never give up, Harry," said Lucy. "I thought you, who have so much perseverance and resolution, would try again and again. Perseverance against Fortune, you know."

"Yes, if I could by perseverance be sure of succeeding at last," said Harry, "or even have a good chance of it: but it would not be resolution, would it, father? It would only be obstinacy to persist in doing the same thing over again, without knowing how to do it better."

"No," answered his father, "it would not be obstinacy, but it would be senseless and useless perseverance. You have come exactly to the conviction to which I knew your two experiments and your good sense would bring you, that mathematics are so necessary, not only to bridge-building, but to almost all the useful arts, as well as sciences, that you can make but little progress without this knowledge. Having found yourself stopped short for want of it, in an affair on which your heart was set, and which seemed merely a handicraft art, you feel this come home both to your business and your pleasure. So now put by the Encyclopedia for to-night; go to bed, and think no more of arches and bridges, nor even of mathematics, till to-morrow."

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Next morning Lucy met Harry with a melancholy countenance, and in a mournful tone said, "My dear Harry, all the time you are learning mathematics, are we to have no bridge? Is it all come to this at last?"

"My dear Lucy, do not be in such terrible despair," said Harry. "Let us consider about the suspension bridge, of which Sir Rupert was talking."

"Oh! yes," cried Lucy, "I was in hopes that we could make a suspension bridge. How was it Sir Rupert described it; can you recollect, Harry?"

"That bridge which he described," said Harry, "was formed of huge iron chains, hanging across the river, from high piers built of solid masonry on each bank. These chains passed over the top of the piers, and down to the ground, and the ends were secured fast in the solid rock. If these fastenings do not give way, from the weight of the arch of chains pulling over the top of the piers, and if no links in the chains themselves break, the bridge suspended from that arch, with any proper weight that can be laid upon it, or may pass over it, would be safe, and the bridge would last for ever."

"So in this bridge, then," said Lucy, "the arch is turned upside down."

"Yes," said Harry, "the arch is inverted. And there is one great advantage for me in this, which is what I want to come to; that an arch which hangs saves all the difficulty of construction to me. It hangs by its own weight, like a chain, and gravity settles the matter for me, and makes it take the right shape. Look out of the window, Lucy, at the curve made by that chain in the fence, between two of those wooden posts; that is called the *catenary* curve, from *catena*, a chain. I have just been reading about it. Now suppose it stiffened in its present shape, and inverted, and then set upon the ground like an arch, it would make a very strong bridge if it had good butments. But hanging down it will do our business."

"Will it?" said Lucy. "I am glad of it; but we have no chains, and you would be obliged to build up great pieces of solid wall, piers as you called them, and then you must ask for the mason's man again, and there would be all that trouble over again. I will tell you what would do instead, without any trouble. There are two trees on the opposite banks of our river, Harry, a little higher up the hill than our bridge is."

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"*Was*, not *is*," said Harry.

"Was," repeated Lucy, with a sigh. "But these trees are in a beautiful place, and they are good large trees, with stout stems. Now from one to the other of these could we not hang, instead of great heavy chains, strong ropes, and fasten them securely round the trunks of the trees? Do you know the place that I mean, where the two trees are?"

"I know the place very well," said Harry, "and an excellent place it is, about eight feet across from bank to bank, and the trees about sixteen feet asunder. And yours is a very good notion of making use of these trees to hang our suspension bridge from: but when you have hung your ropes, how will you get on? And tell me, do you mean to let them fall down archwise, or to stretch them tight and hang a basket to them, and so pull the passengers over by a rope fastened to the basket, in the Tarabita way?"

"No, no," said Lucy, "I should not like to go in the basket that way, nor would mamma, I am sure. Do not Tarabita us over. Pray, Harry, think of some better way."

"I will tell you how I would do it," said Harry. "But, in the first place, why should we use ropes? Why not wire? There is an inconvenience in ropes which there is not in wire. Ropes would stretch; tie them or fasten them in what way you would to your trees, the arch of rope would stretch or shrink."

"Yes, with the dryness and damp, if with nothing else," said Lucy: "therefore, instead of rope, let us have wire. But recollect, Harry, that if wire does not stretch, it may crack and break."

"That is true," said Harry; "but we must have strong wire, such as fences are made of; and, you know, we might easily try the strength of the wire first, by hanging weights to it."

"And where shall we get such wire, and enough of it?" said Lucy.

"That is another affair," said Harry.

"Well," said Lucy, "suppose your wire were fastened round the two trees, and hanging across from bank to bank?"

"Yes," said Harry, "fastened to the trees, at about the height of six feet from the ground, and the wire passed round the body of the trees, and two lengths of

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wire stretching across, with the thickness of the trunk of the tree between them: both wires hanging equally loose."

"But it would not fall into the shape of an arch, because wire is *stiffish*, you know; and I am afraid that its own mere weight would not be sufficient to bring it to the curve in which a heavy chain would fall."

"Very true," said Harry, "but I think it will take that curve when I hang some weight upon it; the weight of my bridge; you shall see."

"Show me that," said Lucy, "for the bridge is what I want to come to. Of what is that to be made, and how?"

"Of two deal boards," said Harry, "and they must be joined together endwise, by nailing a short piece of board to them both underneath; then these two boards would be long enough, not only to reach across from bank to bank, but also to lie firmly on the ground at each end."

"But that is only a plank bridge, thrown across in the old way," murmured Lucy.

"Stay a bit," said Harry, "and you shall see something new. I have not finished what I was going to say, and I must go back one step. I forgot to tell you that, before I laid these boards down, I would nail across their under side five or six slips of wood, somewhat like those with which you may recollect we connected the top of the centrings, but stronger. The ends of these slips of wood are to project beyond the edges of the board, suppose a few inches at each side: then I would lay down the board as before, and to each end of all these slips of wood I would fasten a piece of wire, but of a smaller kind than that of which my arches are to be made. I would then carry these pieces of wire, which Sir Rupert called *stirrups*, straight up from the ends of the cross slips, where they are thus fastened, to the two great hanging wires over head, and I would fasten them to these wires tightly. Then, you see, we should have six upright wires on one side, and six on the other; and you would be able to walk on your board between them. Now the weight of this board, and of whatever comes upon it, will, I think, draw the two great wires into the proper arch shape: and then we shall have the strength of an inverted arch to support our plank bridge. Just the same as if it were an

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arch on the ground, with its back upwards, and a road over it."

"Excellent," said Lucy; "I see it all, and I shall be able to walk safely between those up and down wires, which, besides supporting the board, and hindering it from swagging down in the middle, and in all its great bending length, will also form a nice sort of fence, to prevent my feeling giddy. Those upright wires would form a sort of balustrade, that is the word, and altogether I think the thing would look very pretty, and I wish we could make it. If we had but the wire!—But then, my dear Harry," said Lucy, after a short pause, "this bridge, will do only for human creatures. The ass and the ass-cart cannot go over it."

"No," said Harry, "we must give that up."

"So we must, and so we will," said Lucy; "and after all, it is not much trouble to the ass to go round the other way. It was only for the glory of the thing I wanted him to go over your bridge; and all that can be said is, that yours, Harry, is not the *ass's bridge*."

"Thank you," said Harry, accepting even of a pun willingly and gratefully when in due season.

Next morning came Sir Rupert Digby, and he was of great use to Harry. Luckily, he had a supply of all the things which were wanted for this bridge. He had some strong wire, of an eighth of an inch thick, and some of a tenth; these had been procured for the purpose of making invisible fences, to keep the hares from Lady Digby's carnation-beds, and sufficient had remained for Harry's bridge. Two long deal boards he also supplied, besides a short piece for uniting them; and some old paling furnished the cross-pieces.

Thus happily provided with all he wanted, Harry went to work; and in the course of a week's labouring with wood and wire, he successfully accomplished his suspension bridge, according to the plan he and Lucy had formed together. The arch hung from tree to tree, in a beautiful spot, as, without exaggeration, Lucy had described it; and across from bank to bank stretched the bridge, supported by its six wires from the arch above. The mother went over the mother's bridge the day it was finished, without once catching flounce or petticoat in the wires. Indeed, after having crossed it, complaisantly, twice for the honour of the architects, she actually crossed and recrossed it a third time,

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purely for her own satisfaction. As to the number of times which Lucy crossed and recrossed the mother's bridge this day, it must not be named, for it would pass all human, or all grown-up, powers of belief.

The historian has been minute, perhaps, even to tediousness, in the detail of the construction of this suspension bridge, in the hope that it may prove a pleasure to some future young workmen. For their encouragement it should be noted, that this is not a theoretic, but a practical bridge. Nothing is here set down but what has been really accomplished by a boy under twelve years of age. It has been said, as an incentive to enterprise, that whatever man has done, man may do again. And it is equally true, that whatever boy has done, boy may do.

One day Harry and Lucy were with their mother at her comfortable seat, she working, Lucy reading to her, and Harry making a kite; he looked up to see which way the wind was, and he saw Sir Rupert Digby coming down the mountain towards them. Away went books and work, the kite and its tail were cleared off the ground, and Harry and Lucy ran to meet their friend. He had a long pole in his hand, pointed with iron, which he used as a walking-stick. This Harry and Lucy instantly supposed must be one of those used by the peasants on Mount Pilate, of whom they well remembered the account which their mother had formerly read to them. The long-disputed question between them, as to the manner in which these poles were held by the people, who used them in descending mountains, was now settled beyond a doubt by Sir Rupert's evidence, and by his showing them the method. Lucy found that it was exactly the way which Harry had understood from the description, and shown to her. Lucy walked, or attempted to walk, all the rest of the way, down the steepest part of the path, with Sir Rupert's pole; but, far from its being of use, she slipped ten times more than usual, from want of understanding the practice as well as the theory of wielding it. After they were fairly on flat ground, and had passed Harry's bridge, paying due and never-failing toll of admiration, Lucy began to ask Sir Rupert questions about Mount Pilate; whether he had ever ascended it when he was

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in Switzerland, and whether he had seen or heard any thing of the twelve children who once lived there, in a hut which they had built for themselves, with a dog to guard them. Sir Rupert had ascended Mount Pilate, but of the twelve children, their hut, and their dog, he could give no information. Indeed, had the individuals for whom Lucy was inquiring been living and forthcoming, they must, by this time, have been about eighty or ninety years of age. To make amends, if possible, for his ignorance about these children, he gave Lucy a description of a storm, which came on one day when he was in a boat on the Lake of Lucerne, so suddenly, and with such violence, that it was all the experienced boatmen could do to get into a little bay in time to escape the danger of being upset. The lightning was more brilliant and frequent than any he had ever seen in England, and the thunder reverberating from the mountains more deep-toned and sublime. But the circumstance which remained in his mind, as most characteristic and picturesque, was the sudden gathering of an immense body of black cloud, which covered the blue sky almost instantaneously, and descending from the summit of Mount Pilate to its base on the edge of the lake, hid the whole of that mountain as completely as if it had not been in existence. In less than ten minutes, this black, dense mass of clouds, which had advanced upon the blue waves, opened towards the middle, and, like a curtain drawn back in vast folds, passed away on each side, revealing the base of the mountain; the divided mass then quickly rolled upwards, like enormous volumes of smoke, and vanishing from the summit, left it clear. In a few moments no trace of cloud was to be seen, the sky was blue, the sun shining brightly, and the whole expanse of the lake placid and unruffled as if no storm had ever been.

To interest Harry still more about Mount Pilate, Sir Rupert promised to send him an account of an extraordinary mechanical work, which existed there a few years ago, called the slide of Alpnach.

"Could not you give me some idea of it now, sir?" said Harry; "I dare say we should understand it as well, or better, from your description, than from the book."

"I will endeavour to explain it," said Sir Rupert,

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"as you wish it; but in the book to which I allude, there is a more clear and exact description than I can hope to give. It is written by one who saw the work," continued he, turning to Harry's father, "by our great, our amiable, our ever-to-be-regretted friend, Professor Playfair.

"First, Harry, I should tell you the purpose for which it was made. On the south side of Mount Pilate there were great forests of spruce fir; and at the time of which I am speaking, a great deal of that timber was necessary for shipbuilding. These forests were, however, in a situation which seemed almost inaccessible, such was the steepness and ruggedness of that side of the mountain. It had rarely been visited but by the hunters of the chamois or wild goat, and they gave information of the great size of these trees, and of the extent of the forests. There these trees had stood for ages useless, and there they might have stood useless to this day, but for the enterprise and skill of a German engineer, of the name of *Rupp*. His spirit of inquiry being roused by the accounts of the chamois-hunters, he made his way up by their paths, surveyed the forests, and formed the bold project of purchasing and cutting down the trees, and constructing, with some of the bodies of the trees themselves, a singular kind of wooden road or trough, down which others fit for shipbuilding could be sent headlong into the lake below, which fortunately came to the very foot of the mountain. When once upon the lake, they were to be made into rafts, and, without the aid of ships or boats to carry them, they were to be floated down the lake. It was proposed, that from thence they should be conveyed by a very rapid stream called the Reuss, into the river Aar, and thence into the Rhine, down which these rafts could be easily navigated to Holland, where the timber was wanted. They might further be transported into the German Ocean, where they could be conveyed to whatever port was desired.

"Forgive me," said Sir Rupert, smiling, as he looked at Lucy, "for troubling you with the German Ocean, and the Rhine, and the Aar, and the Reuss, and with all my geography; it is not for the sake of displaying it, nor for the purpose of trying your patience; but I mention their names, because I am sure that you will look for them on your map, and you will understand the diffi-

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culty, and find the whole thing much better fixed in your memory by knowing all the places and distances distinctly. Besides, you will be better able to explain it to others, than if you could only say, There was a forest on some mountain, whose name I don't know; the trees were thrown down into a lake, whose name I can't recollect, and sent by a rapid stream, whose name I never knew, into another, whose name I forget, and so on to a great river, whose name I ought to remember, but cannot, and so into an ocean, which has a particular name, if I could recollect it, till at last, somehow, these rafts got to wherever they were wanted, but where that was I cannot well tell."

Lucy half laughed and looked half ashamed, for she said she had often felt almost as much at a loss in repeating things she had heard, for want of remembering the geography of the story.

"But now, sir, for the slide," said Harry. "You said, I think, that it was a kind of trough made of the bodies of trees; did you mean the mere trunks, without their being sawed up into boards?"

"The trunks of the trees," replied Sir Rupert, "just roughly squared with the axe. Three trees so prepared, and laid side by side, formed the bottom; another set formed each of the sides; and all, strongly fastened together, composed this enormous trough, which was about three or four feet deep, and about six feet wide at the top. It extended to a length of more than eight miles, from the place where the forest stood on the side of the mountain to the lake below. Each tree that was to be sent down had its branches lopped off, its bark stripped, and its outer surface made tolerably smooth. Men were stationed all the way down, at about half a mile distance from each other, who were to give telegraphic signals, with a large board like a door, which they set up when all was right and all ready to begin, and lowered when any thing was wrong. These signals were communicated from man to man, so that in a few seconds the intelligence was known all along the line that a tree was to be launched. The tree, roaring louder and louder, as it flew down the slide, soon announced itself, and, as Playfair describes it, came in sight at perhaps half a mile distance, and in one instant after shot past, with the noise of thunder and the rapidity of lightning."

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"How I should like to have seen it," said Harry. "Sir, did not you say that Mr. Playfair himself saw a tree go down?"

"Yes, he and his young nephew saw five trees descend. One of them a spruce fir, a hundred feet long, and four feet diameter at the lower end, which was always launched foremost into the trough. After the telegraphic signals had been repeated up the line again, another tree followed. Each was about six minutes in descending along a distance of more than eight miles. In some places the route was not straight, but somewhat circuitous, and in others almost horizontal, though the average declivity was about one foot in seventeen. Harry, I hope I am exact enough to please you."

"And to instruct me too," said Harry, "for I could not tell how wonderful the thing really was without knowing all this."

"Did Mr. Playfair and his nephew stand at the top or the bottom of the hill, sir?" said Lucy; "did they look down upon the falling trees, or up the hill to them as they were descending?"

"Up to them," said Sir Rupert. "They stationed themselves near the bottom of the descent, and close to the edge of the slide, so that they might see the trees project into the lake. Their guide, however, did not relish this amusement; he hid himself behind a tree, where for his comfort the engineer, Mr. Rupp, told him he was not in the least degree safer than they were. The ground where they stood had but a very slight declivity, yet the astonishing velocity with which the tree passed, and the force with which it seemed to shake the trough, were, Mr. Playfair says, altogether formidable. You, Harry, who are a mechanic, must be aware that, with bodies of such weight, descending with such accelerated rapidity, there would be great danger if any sudden check occurred; but so judicious were the signals, and all the precautions taken by this engineer, that during the whole time the slide of Alpnach was in use, very few accidents happened. The enterprise, begun and completed so as to be fit for use in the course of a few months, succeeded entirely, and rewarded, I believe with fortune, I am sure with reputation, the ingenious and courageous engineer by whom it was planned and executed, in defiance of all the prophecies against him. The learned, as well as the un-

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learned, when first they heard of it, condemned the attempt as rash and absurd. Some set to work with calculations, and proved, as they thought, and I own as I should have thought, that the friction would be so great that no tree could ever slide down, but that it must wedge itself and stick in the trough. Others imagined they foresaw a far greater danger from the rapidity of the motion, and predicted that the trough would take fire."

"That is what I should have been most afraid of," said Harry.

"And your fear would have been rational and just," said Sir Rupert. "This must have happened but for a certain precaution, which effectually counteracted the danger. Can you guess what that precaution was, Harry?"

Harry answered, that perhaps water might have been let into the trough.

"Exactly so, Harry," said Sir Rupert; "the mountain streams were in several places conveyed over the edges, and running along the trough, kept it constantly moist."

After this, Sir Rupert and Harry's father began to talk to each other about some curious circumstances concerning the slide of Alpnach, which have puzzled men of science and philosophers. Harry did not comprehend all they were saying; but his curiosity was often excited by what little he did understand.

His father said that he could better have conceived the possibility of the safe descent of the trees on this wooden road, if it had been in one straight, uninterrupted line; but there were, as it appeared, bends in the road. He should have judged beforehand that a descending body of such *momentum* (weight and velocity) could not have had the direction of its motion changed as suddenly at these turns as would be necessary, and he should have thought, that either the side of the trough against which the tree would strike at the bend must have been broken, or more probably that the tree would, by its acquired velocity, have bolted in a straight line over the side of the trough. Sir Rupert said that he should have thought the same, beforehand; and both agreed, that the facts ascertained by the unexpected success of this slide of Alpnach opened new views and new questions of philosophical discussion, as the result was contrary to some of the generally received opinions of mechanics, respecting friction especially.

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"Harry, my dear," said Lucy, "what were you doing this morning when I passed by without your speaking, and when you were drawing something upon a slate?"

"I was drawing," answered Harry, "the roof of a house for Dame Peyton. The other day I heard her talking to the woodman about a new roof which she is going to have made, and I did not think the plan they proposed was a good one. Sir Rupert Digby has given me leave, indeed, he has desired me, to try whether I can make one that will do better, and he will be so kind as to give whatever timber is necessary; and papa will look at my plan, and hear what the woodman proposed, and determine which will do best."

Harry had long ago learned the principles of roofing, from a little model which his father had made for him. It took to pieces, and could be put together again, and the names of all the parts were written upon them, so that both their names and uses were familiar to him. Besides, he had since seen in large what he had learned in small. He had observed the manner in which his father had made or repaired the roofs of his tenants' houses, so that he had now only to apply what he already knew to his present purpose in making the plan for Dame Peyton's roof.

Lucy begged of him to let her see it, and to explain it to her before he showed it to his father, that she might understand what he was about. Harry said he would explain it to her with pleasure; but he thought it would be best, before he showed her his drawing, to give her some general notion of the principles of roofing, or else she could not understand whether his plan was right or wrong, or good or bad.

Lucy said that she should like this very much, if it was not very difficult to understand.

"Not in the least," said he; "my father explained it to me, and I will try and do the same for you. I will begin, as I remember he did, by settling first the thing to be done. In order to have a good roof, it is necessary that it should be so constructed as to enable it to bear not only its own weight, but the weight of the thatch, or tiles, or slates with which it is to be covered. It must be made so as to stand steadily, and so as not to push out the walls of the house. It must be fastened

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on the house, so that it may not be blown away by the wind; and it must slope, so as to carry off the water which falls when it rains or snows. Besides all this, a good roof should be as light as may be consistent with strength, not only because it should press as little as possible on the walls of the house, but because there should be no waste of timber, timber being sometimes scarce; and even in countries where there is plenty, it would only weaken the work by useless weight, to employ more timber than is necessary for strength."

"Yes, I understand very clearly the thing to be done," said Lucy; "now for the way of doing it. But you said one thing, Harry, which I think was not quite correct; you said roofs must slope to let off the water; now I have seen flat roofs."

"It is true," said Harry, "some roofs are flat; but, *in general*, as I should have said, roofs are made to slope from the middle down to the front and to the back; not only to let the water run off, but for the strength of the roof, as I will explain by-and-by. Some slope more, you know, and some less."

"Yes," said Lucy, "and some are ugly, and some are pretty; I hope that is to be considered in your good roof."

"Yes," said Harry, "and some are strong, and some are weak; that is to be considered first. Under the thatch, slates, tiles, or whatever the outside of the roof is covered with, you know, Lucy, there must be some sort of framework, which supports this covering. Have you any recollection of the look of that framework? You have, I know, often seen the roofs of houses before they were slated, have not you?"

"Very often," said Lucy; "yet I have only a general notion of a sort of wooden work, as you say, sloping both ways from the middle, with some sort of triangular-shaped frames underneath, and straight pieces of wood nailed across these."

"That is the general look, and I will explain the use of those triangular frames," said Harry.

"The use, I think," said Lucy, "was to support the weight of the pieces of wood to which the slates were to be fastened."

"But why should these frames be triangular?" said Harry; "do you know? Would they do as well if they were not that shape?"

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Lucy said she did not know; she had a feeling that they would not be so strong, but she could not exactly give a reason for it.

"Then I will show you," said Harry, "for all roofing depends upon this; and if you once understand this well, all the rest is easy. Suppose that this frame was not a triangle—suppose the base, or piece that goes across, taken away, and the two sloping sides placed on the walls of a house, with their upper ends leaning against each other, what do you think would happen?" said Harry.

"They would hardly stand, I think," said Lucy, "unless they were fastened together at top, and fastened to the wall in some way at the bottom. They would slip, like cards which we set up that way in building card houses."

"Very well," said Harry, "so they would. Now suppose them fastened together at top, what would happen when a great weight was put upon them?"

"Still they would be pressed out at bottom," said Lucy.

"Now how will you hinder that?" said Harry.

"Fasten them well to the walls on each side," said Lucy.

"But," said Harry, "the weight must still tend to press them out at the bottom; and if they are fastened to the walls, then the walls must be pressed out also. Look at this ruler of mine," continued he, opening a carpenter's rule, and setting it up like a sloping roof upon two books; "these two books may stand for walls, and you see they are pushed down when I press my hands upon the roof."

"I understand," said Lucy. "Now I perceive the use of that piece of wood at bottom, that base of the triangular frame which you took away; we must put it back again: I see it is the great, the only strength of the whole. The ends of the two sloping pieces must be well fastened to that; they are then held together, and cannot be pressed out at bottom, and the weight on them will not then push out the walls."

"But now, before we go on any further," said Harry, "let me tell you the names of the different parts, or we shall get into confusion. A roof made in this manner is called a framed roof, or a *trussed* roof. The two sloping pieces of this frame are called *principal rafters*."

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"I have heard the tenants, in talking to papa about roofs, ask for a pair of principals," said Lucy; "now I am glad to know what is meant, and what they wanted."

"And this piece," continued Harry, "which goes across at the bottom, and forms the base of the triangle, holding, or, as we say, tying it together, is called the *girder*, or *tie-beam:* sometimes this piece is not placed at the bottom, but higher up, and then it is called the *collar-beam*."

"The whole must be much weaker when it is higher up than when it is quite at the bottom, I think," said Lucy. "I would rather have a tie-beam than a collar-beam, if I were to have a roof."

"You are very right in that," said Harry. "But let us go on. Such frames as these are sufficient for a small roof, like Dame Peyton's. Six or seven of these, I believe, there were in her old roof; and they were all fastened together at top by a long piece of wood called a *ridge-pole*, and at bottom they were secured to flat pieces of wood on the top of the walls of the house, which are called *wall-plates;* over these were laid, about a foot asunder, slender but straight branches of trees, about the thickness of my wrist. They lie across from frame to frame horizontally, and sometimes over these they lay hurdles to support the thatch."

"I think Dame Peyton's had hurdles," said Lucy. "I recollect looking up one day at the loft. I remember the look of the hurdles, and the thatch above. All that you have told me about a roof, Harry, is not nearly as difficult as I expected; it is really very simple and easy."

"Then this is all that is necessary for the roof of any small house," said Harry, "where the width or span is not above fifteen or sixteen feet, like Dame Peyton's."

"Was there any particular fault in her roof except old age?" said Lucy.

"Yes," said Harry, "there was; a fault which prevented it from lasting to old age. It was not at all old, but weak. It had the very fault you said you should not like to have in the roof of your house; instead of having girders, it had only collar-beams, which were placed so high up that they had not sufficient strength to prevent the principal rafters from spreading out."

"How foolish the man must have been who built it in that way," said Lucy; "or do you think he had any reason for it?"

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"He did it, I suppose, to give more room over head in the loft," said Harry.

"You will not do so," said Lucy. "But except that you will have girders, will your roof be the same as the old one?"

"No," answered Harry, "mine must be different in other ways, and I will tell you why. The span of Dame Peyton's new roof must be considerably larger than that of her old one. You know the shed which goes along the whole length of the back of her house? It has a lower roof, that slopes from the back wall—a *pent-house* roof; that roof is to be taken down, as it lets in the wet. She will have the wall of that shed raised, to make it even with the walls of the house; and she is determined to take away the present back wall of the house, which divides it from the shed."

"Then the new roof is to cover the whole," said Lucy. "I am glad of it. Now show me your plan."

"First answer me one question," said Harry, "and tell me what you would do yourself. The span, you know, is to be five feet more than that of her old roof; then the girder must be five feet longer, and the length of it will be much greater in proportion to the principals."

"I see that the girder must be terribly weak," said Lucy, "and likely to bend in the middle."

"Yes," said Harry, "especially when the weight of the kitchen ceiling is to be added to it below. Then the question I ask you is, how would you prevent this girder from bending?"

"Could not you tie it up in the middle by a rope, fixed round the beam, and then fastened well to the top of the roof where the rafters meet?" asked Lucy.

"Very well," said Harry, "but why with a rope? If you please, we will tie the girder in a man's way, with a piece of timber. A strong straight piece, called a *king-post*, is set up perpendicularly, and fastened into the middle of the girder at bottom, by *morticing* or *dove-tailing* it; and near the top notches are cut, in which the upper ends of the principals are fixed; so that in fact this post hangs upon the principals; and as they lean against it, they mutually support one another, and hold up the girder, which you see cannot bend in the middle now."

"That is excellent," said Lucy. "Now I understand it all."

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"All as far as I have told you," said Harry; "but all is not perfectly safe yet. There is another thing which might happen, another danger of which I have not told you: in my roof, you see, not only the girder is much longer, but the sloping rafters also are much longer than in the old roof, and consequently weaker; they will require some further strengthening, especially if Sir Rupert slates the house, as he talks of doing, some time or other; my roof therefore must be able to support the weight of slates. How shall I strengthen the principals, and where? tell me, before I show you my drawing."

"You should strengthen them in the middle of their length, I think," said Lucy, "where they are the weakest."

"I think so too," said Harry; "and how?"

"Could not you put up sloping pieces from the bottom of the king-post to the middle of the principals? Would not this do, Harry?"

"I hope so," said Harry, "for that is exactly the way I mean to do it. Here is my drawing now; here are those sloping pieces, as you call them: their right names are, I believe, *braces*, or *strutts*."

"Two names!" cried Lucy; "I wish they had only one, and then I should have but one to remember."

"I am sorry they have two, but I cannot help it," said Harry. "A workman must know all the names, because they are sometimes called by one and sometimes by another, by different people."

"But one will do for me," said Lucy; "for all I want is to understand you; and if we agree upon one, and if you use that same word always, that will do."

"Then let us call them *strutts*," said Harry. "There are some of the parts of a roof which tend to *push* asunder sidewise, and some which *pull* downwards. Now look at this triangle before our eyes; look at all its parts, principal rafters, girder, king-post, strutts; tell me which tend to push and which to pull asunder?"

Lucy looked and considered each, and then answered, "These sloping rafters tend to push asunder, if they are not prevented by the girder."

"You need not repeat what prevents it," said Harry, "I am sure you know *that*. But now tell me plainly which have a tendency to push and which to pull."

"The principal rafters have a tendency to push out,"

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said Lucy; "the girder to pull them together; the king-post tends to pull downwards, especially if the weight of the ceiling of the room below is added to the weight of the girder."

"Right," said Harry. "It is necessary for anybody who is to make a roof to know this clearly; because, when they come to the choice of their materials, they must have pieces of different sorts to resist the *push* or the *pull*. But I need not explain this more to you, because you are not to be a workman. And now I think I have but little more to explain to you in my plan. I have three of these frames, connected in the same manner as in the old roof, by a ridge-pole at top, and by the wall-plates below."

"Three! only three of those frames," said Lucy. "Why should you have only three! In Dame Peyton's old roof you told me there were five or six, and yours is to be much larger."

"True, but I will show you how mine is to be strengthened. I am to have *purlins*, or, as some people pronounce them, *purloins*."

"And what are purlins, or purloins," said Lucy, "and where do they go!"

"They rest upon the principal rafters, just above *your* strutts, which are put in on purpose to support their weight. A purlin is a long piece of timber, that goes horizontally across the frames, one on each side of the roof; and as Sir Rupert talks of slating Dame Peyton's house some time or other, though it is only to be thatched now, my roof had better have purlins, to make it strong enough for slates. Smaller rafters are then placed between the principal rafters; they are about a foot asunder, and are prevented, by the purlins, from bending. To these rafters the laths are nailed, at proper distances, according to the size of the slates or tiles which are hung to them. And now, as that is all I have to say, I will go and show my plan to my father. I hope," added he, stopping to consider, "that my roof is strong enough: if it is not, I must put in queen-posts, as well as a king-post; but perhaps that would make it too complicated. I think it will do without it. I will ask my father's advice."

"But first," said Lucy, "just stop one moment more, my dear Harry. What is a *queen-post*?"

"The queen-posts," said Harry, "are hung to the

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upper ends of the two strutts; and, like the king-post, which supports the middle of the whole girder, they support the middle of each half of the girder. In roofs of great *span*, or width, such as of churches and play-houses, the queen-post has her strutts also, forming fresh triangles just in the same way, and all for the same purpose, to prevent either girder or principal from bending; in short, there is but little difference between the king and the queen."

"Except," said Lucy, "that she is neither so tall nor so strong. But thank you, Harry, for stopping to tell me all that. I understand it quite well."

"Then I am quite satisfied," said Harry; "and now I will go and show my drawing to my father."

"Why should not I go with you?" said Lucy: "I want to hear what papa says to your plan, and whether he likes it better than the woodman's."

"Come, then," said Harry, "and you will hear all about it."

"It looks well, Harry," said his father, as he looked at Harry's drawing of his roof. "But now explain it to me."

"Will you let Lucy explain it, sir?" said Harry; "I believe she can."

"Do so, Lucy," said her father.

She did explain it very well; and the uses of the several parts, and called each by its right name.

Her father smiled at the readiness with which she spoke of principal rafters, girder or tie-beam, king-post, and strutts.

"I am not sure," said he, turning to Harry, "that knowing all these names may ever be of much use to Lucy; that must depend upon circumstances; but of one thing, which is independent of circumstances, I am sure, that the disposition your sister shows to turn her attention quickly to whatever interests her friends, and to learn all that can enable her to sympathize with them, even when she can no otherwise join or assist in their occupations, will make her, if she pursue this habit in her future life, agreeable as a companion, beloved as a friend, and amiable as a woman. But to return to your plan, Harry," added his father.

"Is a queen-post necessary?" said Harry.

"Not at all, Harry; your roof will be quite strong enough, if the timber is well chosen. I approve of your

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plan; and I am so well pleased with it, and with your wish to be of use, that I will give you all the assistance I can. I will, in the first place, look at the timber for you, and see that each piece is fit for the purpose, because you have not had experience enough to judge what will bear the weight or strain which is to come upon it."

"Thank you, father, that is the very thing I meant to ask; as I cannot do it for myself, I know, not only for want of experience, but of something else, father," added Harry, smiling; "something which I know I do want, and without which I cannot calculate for myself what weight or strain any roof or *arch* either would bear."

"Oh, mathematics you mean," said Lucy. "No, papa would not put you in mind of that again, because he knows you are doing all you can. He has never missed his half hour at mathematics one single day, papa, even in the midst of this *great press of business* about the roof."

"I know it," said her father, "therefore I would not spur the willing horse; that would be cruelty, according to the best definition I ever heard of cruelty, the giving *unnecessary* pain."

After the timber had been selected, many little provoking difficulties occurred, such as to the young architect appeared extraordinary, but which his experienced father assured him were ordinary, and almost inevitable disappointments in carrying on any work. First the sawyer was not to be had the day he was wanted, to saw out the principal rafters; then the carpenter made a mistake in the height of the king-post; he cut it too short, and it did not fit. He said that Harry had given him wrong measures; Harry was forced to submit to this charge, though he knew it was unjust. But he had not written down his measures, therefore he could not prove that he had been accurate in his directions. At length, however, the new king-post was made, and the work went on smoothly. Lucy watched its progress with great pleasure. She was interested in every part, not only as being Harry's *job*, but because she understood what was going on, and the use of each thing that was done. Even to the making of a *mortice*, and a *bird's mouth*, she learned exactly; for as she now knew the importance of making *joinings* and *fastenings* strong,

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she was anxious to learn how this was to be done, instead of being contented with the vague idea, expressed under the general words, things must be fastened or made fast.

At last the mason's and the carpenter's work were finished. The walls of the shed were raised; the wall-plates put on, and the roof on the wall-plates. The thatcher's work was brought to a close. The whole was complete. Harry, who had been unremitting in his attention to the business as it proceeded, saw its completion with great satisfaction; and Lucy, ever his ready messenger of good news, ran, the harbinger of joy, to call her father. He came, saw, and approved; his approbation increased after a strict examination of every part of the construction and execution of the work. Lucy was delighted; and it would be hard to say which enjoyed most pleasure, she, Harry, or Dame Peyton. When the dame at length saw the place cleared of the workmen's tools, even to the last dab of mortar, and the last chip; when all before the door was swept as clean as besom and new besom could sweep, then, and not till then, she allowed herself to rejoice; then she put on her white apron, and came out to where Harry and his father were standing looking at the roof, and delight and gratitude were expressed in every line of her happy old face. She said, and she proved, that she could not be tired of looking at it. She went up into the loft, and examined it herself, and listened to all Harry's father said, and enjoyed every word and look of commendation bestowed upon Harry and upon the roof, but was very discreet in not offering a word of praise herself of what she knew nothing about.

Only this she knew right well, that she was very much obliged to Master Harry, and that she should feel the comfort of his roof as long as she lived, she was sure.

Sir Rupert Digby also came, saw, and approved, after an equally careful examination. He thanked Harry for the pains he had taken; observed that he had not overrated his powers; and said, that, independently of the service done to Dame Peyton and to himself, he was heartily glad to find that Harry could steadily go through with such an undertaking as this. It must give him confidence in himself for the future.

Sir Rupert's commendation was given, not lavishly,

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but in a very careful, measured manner; it was plain that he would have liked to say more, but that he refrained. The more he liked any young persons, the more careful he was, not only to avoid flattering, but even to abstain from giving them the high wages of praise early in life, however well earned.

"There is so much," said he, "of hard work which must be done in after life, and gone through without praise by all who do their duty, that we ought not to overpay in the beginning."

> "For fainting age what cordial drop remains,
> If our intemperate youth the vessel drains."

Whether all his young friends approved of this anti-praise principle of Sir Rupert's, or whether, like Harry, they liked him all the better for it, we cannot decide. Lucy looked doubtful; but one point is certain, that she much liked the next thing he said, which was, that Lady Digby and he hoped that they would all come the next Monday morning to pay them a long-promised visit at Digby Castle. It must be, he added, a long visit; he had much to show his young friends; and he hoped to be able to amuse and make them happy, though he could not promise them any companions of their own age, as none of his nephews or nieces were to be had; and his son Edward, his only son, was at Cambridge. But there was a workshop at Digby Castle, and that he knew would be enough for Harry; and an old garden and an old hermitage for Lucy, to say nothing of a new conservatory; and a library for all, with books that were not locked up; chessboards; battledoors and shuttlecocks; ninepins in the great hall, for rainy days; and bows and arrows, and a target on the green, for fine weather.

If such delights the mind may move, who would not wish to go to Digby Castle?

Harry and Lucy's father and mother had now been at Rupert Cottage for several months; and on some happy Monday, late in spring, we find them actually on the road to Digby Castle.

"Which way would you please to go, sir?" said the postillion, looking back; "would you please that I

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should drive round by the new approach, as they call it, or turn up here, by the avenue? this is the nearest way, only it is up hill, sir."

"Go by the avenue, if you please."

Harry and Lucy were glad of that. They drove in through a massive gateway, under the spreading arms and meeting branches of fine ancient oaks.

"Now for the first sight of the castle," cried Lucy; "and there it is, look, Harry, with its towers, and turrets, and spires, and pointed pinnacles. It is a Gothic castle, I know; I have seen a print like it in Britton's Beauties of England. Look out at my window, Harry, and you will see much better."

While they slowly ascended the hill, they had leisure to examine the front of the castle, though it was now and then intercepted from their view by the long-extending arms of the trees.

"I like that great, deep, dark archway entrance between those two projecting towers," said Lucy.

"So do I," said Harry.

"I like it because of the light and shade," said Lucy, "and because it is like a picture; it is picturesque, is it not, mamma? It is very pretty."

"I like it because it is very useful, too," said Harry. "It looks solid and secure; no danger of that arch ever giving way, even with all the weight of that pile of building on the top of it. Before it could come down, the arch must thrust out those two solid round towers on each side against which it butts."

"True, Harry," said his father, "that is the use of those weighty towers, which you will often see in the arched entrances of Gothic buildings."

"I like those spiry pinnacles," said Lucy.

"Yes, the *minarets*, as they are called, are very pretty," said her mother.

"Mamma, I like those pointed arches better than round arches," said Lucy; "and I like those hanging-out bow windows too, those which look like three windows bound in one, with carved stone-work frames, and with all those ornaments of scallops and roses over each window."

Her father told her that what she called the stone-work frames, which divide the light into compartments, are called *mullions*. He told Harry it was as well to know the right names of these things, especially as they

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can be learned with so little trouble at the time we see the buildings before us.

"I like the lattice windows," said Lucy.

"Outside they look pretty," said Harry, "but I should think the rooms must be very dark within."

He observed slits instead of windows in one old tower, and he supposed that these were used for shooting through, in the time of bows and arrows.

"I like the little jutting-out windows, mamma," said Lucy.

"They are called *oriel* windows," said her mother.

"Oh, yes, oriel windows. I hope we shall sleep in one of those rooms. We are to stay some time, you know, Harry."

"I am glad of it," said Harry, "that we may have time to look at every thing. I hope we shall go all over this castle. It looks very large."

"Yes, and for only two old people to live in," said Lucy; "Sir Rupert and Lady Digby; I should think that they would be quite melancholy in it, and almost lose their way."

Her mother told her that they had often friends in the house with them, and that part only of the castle was inhabited at present; the other part was unfurnished, and she believed shut up.

Lucy particularly hoped that they should see this part; and she also hoped that there was a dungeon, and a keep, and a moat, and a drawbridge; of all which things she had read in descriptions of old castles.

Her father told her that there had been a drawbridge over a moat which had surrounded this castle, but the moat had been filled up, and the drawbridge destroyed.

Harry regretted the drawbridge; he should have liked to have seen how it was pulled up and let down. Lucy moaned over the loss of the moat; but, upon being cross-questioned, it appeared that she had no clear idea of what a moat was. Her father told her that it was only a deep wide trench, or ditch, over which the drawbridge was let down, to admit those who were to be received at the castle, and drawn up again, to prevent the entrance of enemies; and that during the old times of the civil wars, almost every castle had its drawbridge and its moat, which was sometimes filled with water and sometimes dry.

The idea of the moat being only a deep ditch satis-

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fied Lucy for its having been filled up; and her father told Harry that he might see the traces of where it had been when they walked out. As to the *keep* for which Lucy inquired, her father told her that the keep of a castle means the strongest part of the building, to which the inhabitants of the castle used to retire when the besiegers had taken the outworks. The *dungeon* was usually at the bottom of the keep; but there was no chance of her seeing one here, as it had been long since destroyed. Harry rejoiced that both the days of civil wars and of barons' tyranny were past: and Lucy said she would be content without going into a dungeon.

By this time they had driven over the filled-up moat, and reached the entrance to the castle. Harry's father showed him, at the top of the archway, the remains of the *portcullis;* a sort of gate, which was framed of thick crossbars of wood, and made so as to let down in case of surprise, to defend the entrance. A good old peaceable porter now stood where the portcullis had formerly been let down.

They entered the castle by a spacious hall, at the farther part of which was a dark oak staircase, in two flights of low steps, leading to a gallery across the end. In this hall there was a vast fireplace, a huge oak table, and a set of black chairs curiously carved. A pair of jack-boots, and a crossbow, hung on one side of the fireplace; and on the other a stag's head, with branching horns. Along the wall, opposite to the fireplace, hung a row of small black buckets. Harry was going to ask what was the use of these, but Sir Rupert Digby at that moment came into the hall to welcome them. He told them that a large party had left the castle that morning, and that they had the house to themselves.

"We shall dine early, so that the young people may have time to run about, and divert themselves as they like," added he, looking at Harry and Lucy. He saw Harry's eye glance at the buckets. "Guess what is the use of those?" said he. "I should tell you that they are not made of wood, but of leather."

Harry guessed rightly, that they were to carry water in case of the castle being on fire. Lucy thought there was little danger that this castle should be burnt, the walls looked so thick: she forgot the roof. In the room in which they dined she observed the great thickness

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of the walls, which admitted of three chairs, standing beside each other, in the recessed windows.

After dinner was over, including the best part of dinner, in the opinion of young people—the dessert—Harry and Lucy were told, by kind Sir Rupert, that they might go, if they pleased, and amuse themselves by looking at the castle; perhaps they could find their way over it alone, and would like better to do that than to have anybody to show it to them. Lady Digby promised to have them summoned whenever they should go out to walk. "But we old people like to sit some time quietly after dinner, and you young folks like to slip down from your chairs directly, and run off."

"So off with you," said Sir Rupert, "and be happy your own way. Only remember," added he, "there is one door which you must not open till I am with you: the first door on your right hand, as you leave the hall to cross the court."

"Describe it to us very exactly, if you please, sir," said Harry, "lest we should mistake."

"You cannot mistake it, for it is of iron," said Sir Rupert, "and all the other doors are of wood."

"Of iron!" repeated Lucy, as soon as she and Harry were alone together in the hall; "an iron door! not to be opened. I remember when I was at aunt Pierrepoint's I heard them reading some story of mysterious doors. I wonder, Harry, where that iron door leads to."

"My dear, why should it be mysterious?—because it is made of iron?" said Harry.

"No, not merely because it is made of iron, to be sure," said Lucy, laughing, "but because it is never to be opened."

"Till Sir Rupert is with us," said Harry. "I suppose there is something that would be dangerous for us to meddle with in the room."

"What sort of thing, Harry, do you think it is?"

"I do not know, and I do not care," said Harry. "I dare say it is nothing that would divert us: at all events, we may be contented with looking over the rest of the house. Sir Rupert would have told us, if he had chosen that we should know more; and I advise you, my dear Lucy, not to think any more about it."

"Very well; if it is not right I will not," said Lucy; "only I am a little curious."

"Very likely. Very natural for women; but con-

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quer your curiosity," said Harry. "Come, run up this flight of stairs, and I will run up the other, and meet you in the middle of the gallery. Who will be up first? one, two, three, and away."

They ran up, and their heads met in the middle of the gallery with such force, that the light flashed from their eyes; and, as Lucy said, all curiosity was driven out at once. Recovering after her forehead had been well pitied, and after Harry had comforted her by the assurance that it was red, and would grow black, and that she had been certainly very much hurt, she looked to see where they were, and where they should go next. They saw a large lobby, into which the gallery opened, with many doors on each side, and a *mullioned* window at the end. Harry ran and opened the doors on one side, and Lucy on the other. Lucy's doors opened into bed or dressing-rooms, like any other rooms, only that the furniture was more massive and oldfashioned than usual, with plenty of japanned cabinets, and high folding screens. It was all very comfortable, but nothing new or extraordinary. She ran back to see what Harry had found, whom she heard calling to her to follow him. She followed through innumerable little dens of rooms, all unfurnished; some hung with tapestry, some wainscoted, some bare walls, all with corner chimneys, and deeply-recessed lattice windows.

"What pigeon-holes of rooms," cried Lucy. "Little light, and great height; there is scarcely room for a bed, and a chair, and a table, and no room for a sofa."

"Sofa indeed! nobody thought of sofas, or such luxuries, in those war times," said Harry.

"Fine comfort people had in their fine castles in olden times, as they call them," said Lucy. "Bedchambers indeed! There is scarcely room even for such little people as you or I, Harry, to turn about. How could great people manage! especially when they wore hoops, which I believe they did in those days."

"Not men," said laconic Harry.

"Not men," said Lucy; "but they wore armour, and swords or daggers, which must have taken up room. There is more space in my little room in our cottage."

The space that was wanting in the rooms, Harry observed, was wasted in the walls and in the passages. As they were crossing one of these, they opened a little

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door, through which they looked down into a narrow empty space, cut out in the thickness of the walls.

"What could be the use of these places," said Harry; "with all these spiral staircases and odd niches?"

"These were for hiding-places in the wars, perhaps," said Lucy.

"As if men and warriors would hide like cowards," said Harry.

"But women and children would be very glad to hide," said Lucy; "and plate and goods must be hidden; and I have heard even of men, and warriors too, who were very glad to hide and to be hidden; but now those vile civil wars are over, these places and these rooms seem to be good for nothing but to play hide-and-seek in."

Lucy went forward, and opening a folding-door, exclaimed, "Here's a room large enough to please us, Harry!"

"It could contain half a dozen of the others," said Harry.

"I suppose this must have been the state bedchamber," said Lucy, looking at the remains of a crimson velvet bed, whose heavy canopy, within a few feet of the ceiling, was supported by a rough cord, hung to a staple.

"I wonder," said Lucy, as she looked at the remnants of a laced counterpane, which covered the low bed, "whether any king or queen ever slept in this uncomfortable bed; and I wonder whether there were any mysteries belonging to the people who lived in this place."

"Mysteries," repeated Harry, "always at mysteries! I do not know what you can mean."

At this instant something between a sigh and a groan was heard from an inner room.

Lucy grew pale.

"A dog, I suppose," said Harry.

They listened again, and next was heard a thundering noise, as if the house was coming down.

"Stand still, my dear Lucy," said Harry, catching hold of her. "No danger here," said he, looking up to the ceiling, which he saw was safe. "I suppose that some part of the ceiling has fallen in the next room; stand you still and safe, and I will go and peep."

He went forward, and looking through the keyhole,

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began to laugh, and bid Lucy come on and see what was to be seen.

He pushed the door open, and Lucy, recovering the use of her knees, joined him. They saw a boy standing beside a heap of small billets of firewood, which he had just emptied from a basket; and while replacing it on his head, he was grinning at the glorious noise he had made.

The boy had his back towards them; and when he turned and saw them, he started with a face of stupid surprise.

"These be the annulled rooms," said he.

"The what rooms?" said Harry.

"These be not the habited rooms," said the boy; "you have missed your way, I take it: but you may get down this way into the court, and so into the hall, if you go down this back stone staircase; but mind the steps as you go, miss, if you please, for they be a little *ticklesome*."

But Lucy, instead of attending to the boy's caution, only laughed at the word *ticklesome*; and as she followed Harry down the stairs, she began telling him about something she had heard or read when she was at her aunt Pierrepoint's, from the book of mysteries, which had frightened her at the time, and had left an impression of foolish terrors upon her mind. While she was talking very fast, her foot slipped, and down she fell; and would have fallen to the bottom of the steep stairs, but that Harry, who was a few steps beneath her, stopped her fall, and saved himself from being thrown down, by setting his foot against the wall at the turn of the staircase, for there were no balusters to catch by—and thus propping himself, he sustained her weight till she scrambled up and regained her footing, lugging his hair most unmercifully.

"Now, my dear Lucy, pray have done with your mysteries, and mind where you put your feet," said Harry.

"I will," said Lucy, much humbled, and trembling all over.

"Did you hurt yourself much?" said Harry.

"I do not know, but I believe I am a little scratched," she answered.

"I am sure my hair was not a little pulled."

"My dear, I really beg your pardon; but I was so frightened that I did not know what I did."

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"You had cause to be frightened *then*. But, now you are quite safe, sit down on this step, and rest till your colour comes back again," said Harry, looking at her, as the light, through the slit in a loophole of the wall, shone upon her face.

"Harry, I hope I did not hurt you very much?"

"Oh! no, my dear: what man minds a pull of his hair for a sister?"

"You are very good," said Lucy.

"Then do you be very good; and do not say one word more till we are at the bottom of these *ticklesome* stairs."

They reached the bottom in silence and safety, and found themselves in an open courtyard.

"With the iron door on our right hand," said Lucy. "Look, Harry, there it is."

"Yes, miss," said the housekeeper, who was crossing the yard, "that door leads only—"

"Stop, if you please, ma'am," cried Harry: "do not tell us any thing about it, for perhaps Sir Rupert Digby does not wish us to know where it leads to. He bid us not open it."

"There is an honourable young gentleman," said the housekeeper. "So I shall say no more."

The housekeeper passed on about her own affairs, with her great bunch of keys in her hand, and Lucy followed Harry across the court.

"I am sure, Harry," said she, "there is nothing wonderful about that door, because she said that door leads *only*—that word *only* has quite killed my curiosity."

"I am glad any thing could kill it," said Harry, laughing.

He turned to a part of the house which they had not yet seen; but Lucy ran up some steps to look at an oldfashioned garden, which she saw upon the slope of the hill at the back of the house. Harry followed her. The garden was cut in terraces, one above the other, with sloping banks, and steps leading up to them cut in the turf, and high horn-beam hedges, instead of walls, surrounding the garden. They ran on through long alleys, between double rows of thick yew hedges. Harry said these were as good as walls, and better, he thought, because nobody could get through or over them so easily as over a wall; and they looked green and pretty in winter time.

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Lucy said she would have them in her garden when she grew up, and had a garden of her own; but she would never have any of her yew-trees cut into strange forms of globes, and pyramids, and wigs, such as those she saw here. An old gardener, who was clipping one of the hedges, told her he advised against them; "for I have been making war," he said, "with the slugs and snails, black and white, these sixty years and upwards, and I could never rid the earth of them on account of these receptacles for vermin, these yew hedges."

"Good and bad in every thing," said Harry; "one cannot see it all at first."

Lucy was struck with the gardener's ancient appearance, and said he looked like the picture of a hermit.

At the word *hermit* he turned again; and told her that, if she had any fancy to see a hermit, she might go on through the labyrinth till she should come to the hermitage, where she would find an old man, a great deal older than himself—it might be two or three hundred years old—for he was of wood, and indeed a little worm-eaten.

Lucy ran through the zigzags of the labyrinth, and reached the hermitage, where they found the two hundred years old hermit, looking very yellow, leaning with one mouldering hand upon his table, inlaid with shells, the other hand holding a wooden tablet, on which was an inscription that Harry tried to decipher; but it was so worm-eaten that many of the letters were gone; and when he touched the tablet, the wood, in some places, crumbled to dust, eaten, as it had been, by the little insects, which, with their tiny forceps, bore their way through the hardest wood.

Harry could decipher only two words of the worm-eaten inscription; these were, "rightly spell."

"Oh!" cried Lucy, "I know it all from those two words."

"How can that be, Lucy," said Harry; "for here are one, two, three—six lines in this inscription; and how can two words tell you all that?"

"You shall hear," said Lucy. She repeated the well-known lines from Milton's Penseroso, which have probably been inscribed a million of times, in different hermitages in England.

"And may at last my weary age
Find out that peaceful hermitage;

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The hairy gown, and mossy cell,
Where I may sit and *rightly spell*
Of every star that heaven doth show,
And every herb that sips the dew."

Harry acknowledged that she had rightly spelled and put it together. "How curious," said he, "that only two words brought the whole to your mind."

"Very," said Lucy. "But now look at this curious shell-table."

She had, however, scarcely time to examine the colours and shells of its radiated compartments; nor had Harry leisure to decipher an inscription in old English letters, in the scroll the hermit held in his other hand, when they heard themselves called. The seventy years old gardener came after them, to say that Sir Rupert Digby was calling for them, and that the company were going out to walk in the park. He guided them out of the labyrinth, by a short cut across the zigzag paths, and showed them down some steps which led into the park, where their father and mother, and Sir Rupert and Lady Digby, were waiting.

They now took a pleasant walk through the grounds, and went to see a beautiful Gothic church, adjoining the park. Sir Rupert had some thoughts of repairing the roof, and consulted Harry's father about the best manner of doing it. Harry listened, and heard much about pointed architecture, and flying buttresses: and at last he learned, by listening and looking, what was meant by a flying buttress. He found that a buttress meant a prop of stone-work or bricks, built against the outside of any wall, to support it; and a flying buttress, he saw, was a prop of mason-work, raised in the air, like part of an arch, as it were, and flying over from one portion of a building to another, in order to support a weak and light part, by butting against some other which was strong and weighty.

Lucy observed that the word Gothic sounded as if it came from the Goths; and she asked whether Gothic churches and Gothic arches were built by the Goths, or came from their fashions of building?

Sir Rupert Digby turned to Lucy on hearing this question, and answered, "That is a very natural and plain question, my dear; but, plain as it is, I am afraid we can none of us give you a plain answer. It is a question which has led to endless disputes, among the learned and the

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unlearned. Some have used the word Gothic, applied to architecture, as a term of reproach; meaning barbarous, clumsy building, such as might have been built and invented by barbarians, like the Goths: others, who admire these pointed arches, and all that is commonly called Gothic architecture, will not allow that it originated with them. They maintain that it is too beautiful, and too good, to have been the invention of men who had neither taste nor science."

"But what do they call it then, sir?" said Harry, "and from whom, or from whence, do they think it came?"

"More plain questions, to which I cannot give plain answers," said Sir Rupert. "Half a dozen contradictory answers may be given to your questions—where did it come from? and who brought it? Some say that the pointed arch came from the north, some from the south, and some from the east: some, as I told you, are sure it came with the northern Goths; others say it came from Egypt: some are clear that it came from the eastern Saracens—some from the western Moors—some from Normandy—and some from Jerusalem, brought into England by those who returned from the crusades; and one fanciful gentleman maintains, that pointed Gothic arches were suggested by the curves formed by the meeting branches of certain trees; and he has, I believe, planted an osier-aisle, like that of a Gothic cathedral, to prove his theory."

"Very ingenious," said Harry: "but, after all, what is the truth,—do you know, sir?"

"I cannot pretend to decide where so many judges disagree," said Sir Rupert; "but perhaps it will be most useful to you, my dear, only to tell you a few facts, which are established and admitted by all."

"Thank you sir," said Harry and Lucy. "That is just what I like," added Lucy; "for I hate, when a thing has been put into my head, as I think quite right, to find it quite wrong some time afterward—all to be taken out again."

"That is, however, what must continually happen to us all, my dear, in the imperfect state of our knowledge," said her father.

"It has happened to me upon this very subject," said Sir Rupert, "more than once. But to tell you, in short, the little I know. This round semicircular arch, which you see here, and these heavy round columns, such as

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you have seen in many cathedrals, are much more ancient than the pointed arches, and the lighter pillars, and the mullioned windows, with all their *tracery* work, which you admire, Lucy. The semicircular arch, with its heavy round columns, is supposed to be of Roman origin, and to have been brought by the Romans into Britain, and adopted by our Saxon ancestors; thence it is called the Saxon arch. The pointed arch, and all these little spires and rich ornaments, are of much later date: that point is fixed, though I cannot pretend to tell you exactly how much later."

"But who invented them? could you tell me that, sir?" said Harry.

"No, that would be too dangerous a point for me to settle," said Sir Rupert. "You may read some time or other all that has been written on the subject, and judge for yourself. In the meantime, the safest way is, simply to call that style of architecture in which the pointed arch is used, the *pointed style*, a term that cannot well be disputed."

"By any who have eyes," said Harry.

Leaving the partisans of the Saracens, and the Goths, and the Moors, and the pyramids, and the osiers, to fight it out, and settle it in their own way, Lucy went to look at the rich tracery and other ornaments in part of this church, which her mother and Lady Digby were admiring. The ceiling was beautiful. Meeting arches, with fan-like ornaments, as Lucy called them, and pendent drops, hanging from the points where the arches met. Sir Rupert told her that this kind of highly-ornamented Gothic architecture was in its greatest perfection in England about the time of Henry the Seventh; and that the finest specimen of it is to be seen at Cambridge, in King's College chapel.

Harry and Lucy's father promised that he would take them to see it if ever they should go to Cambridge.

"And now," said Sir Rupert, "we had best think of going home to tea, for I see through this coloured glass the light of the setting sun. I am afraid I have given you too long a lecture on Gothic architecture; but when once set a going on that favourite subject, I do not know how to stop. To make you amends, I will take you home by a new and pretty walk."

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In returning to the castle, they passed through a wild part of the deer-park, where there was a profusion of fine primroses. Harry amused himself by sticking some of them into the riband round the crown of Lucy's straw hat.

As they walked on, and came near to the place where the spotted deer were browsing, the deer looked up, and stood gazing upon them, with their large, dark, protuberant glassy eyes, necks erect, and branching antlers thrown backwards. After an instant standing at gaze, the foremost of the herd turned short about and made off, and all the others followed him at full trot. Lucy was sorry for this, and fancied that they had been frightened by her chaplet of primroses, which she now took from her hat: but Lady Digby assured her that the chaplet was not to blame; that deer are such timid creatures, that they are startled by the least noise, and never suffer any strangers to approach them; but, like almost all other animals, they can be tamed by kind treatment. Sir Rupert told Lucy that he had seen a tame deer belonging to a regiment, so docile that he would let a little boy ride upon him; and even permit the soldiers to amuse themselves by sticking their knapsacks upon his antlers.

Harry and Lucy, who ran on before the rest of the party, presently came to a sort of fence, which divided the park; it was made of a single cord, stretched between posts, with feathers stuck across the cord at intervals. Harry and Lucy waited till Sir Rupert came up, and then asked what this was for. Sir Rupert told them that it was an experiment of his gamekeeper's, who had assured him that this sort of fence was the best that could be used to prevent deer from straying beyond any prescribed boundary. They are frightened by the fluttering of the feathers, and never attempt to leap or pass this fence. "This may be true, or it may be false," said Sir Rupert; "experiment must determine. I never allow myself to decide, without trial, against what are called vulgar errors."

Nothing further, worthy of note or comment, happened during this walk.

They drank tea in a part of the castle which Harry and Lucy had not yet seen; in a long gallery, which, as Sir Rupert told them, had been much longer, magnifi-

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cently, but uncomfortably long, so that it could not easily be warmed by day, or lighted by night; therefore he had taken off a room for himself at one end, and at the other end had made a conservatory for Lady Digby. The middle part was now fitted up with bookcases, and was not too long to be easily and well warmed in winter. Over the chimney-piece there was a picture of a man in armour, whose countenance, as Harry observed, was more thoughtful than warlike, more like a philosopher than a soldier.

After tea Harry returned to the picture, and asked if it was a portrait, and of whom? Lady Digby told him that it was a portrait of an ingenious and learned man, who was connected with their ancestors, and from veneration for whom the name of Rupert was given to Sir Rupert Digby. This was the portrait of Prince Rupert.

"Prince Rupert!" exclaimed Harry, in a tone of delight and admiration.

"Prince Rupert!" cried Lucy. "Oh! let me look at him, if he is your Prince Rupert, Harry, who discovered the wonderful drops."

"He is," said Lady Digby; "did you ever see those drops?"

"Never," said Lucy; "I have only heard of them from Harry; he described them to me; he told me that if I had one of them in my hand, and were to hold it fast, while he were to break a bit off the slender glass neck, the drop would directly explode, with a loud snap; and he said that I should feel an odd sort of tingling in my hand, and find that the glass had broken into thousands of pieces. Prince Rupert," continued Lucy, looking up at the picture, "I am glad to see you, and I should like very much to see and hear one of your wonderful drops."

Sir Rupert Digby told her that he believed he had some in his laboratory; and that, if he could find them next morning, he would show one to her; but it was now too late in the evening; he did not like to go into the laboratory by candlelight, as he had there various combustibles, of which it was necessary to be careful.

This evening he produced, for Harry and Lucy's amusement, a portfolio of prints and drawings; among these he showed them an engraving of his illustrious namesake, Prince Rupert. Harry looked closely at the print—so did Lucy; then smiling, she said—

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"I know, Harry, what you are thinking of. It is—and it is quite just."

"It is," replied Harry, nodding, "and it is quite just."

"It is," echoed Sir Rupert, "and it is quite just. I know," added he, "what you are both thinking of."

"I have no doubt that whatever is, is right," said Lady Digby; "but it is always a pleasure to have it illustrated; therefore pray explain."

"And though I dare say you all understand each other," said Harry's father, "let us make sure of it. Remember the two Dervises, in the Persian tale, who held up their fingers, and made signs, and nodded, and pretended to understand one another, but were found out at last each to mean different things, or to mean nothing at all. Pray explain, Lucy."

"I was thinking," said she, "of what Harry told me a great while ago, that Prince Rupert invented this kind of engraving: I forget the name of it."

"Mezzotinto," said Harry.

"And," continued Lucy, "when I looked close at the print, and said, *it is*, and *it is quite just*, I meant that it was mezzotinto, and it was quite just that Prince Rupert's own portrait should be preserved in the sort of engraving which he invented."

"Exactly what I meant," said Harry.

"And what I thought you meant," said Sir Rupert.

"You were not like the cheating Dervises, it is clear," said Lady Digby. "But now I wish that you, Harry, would describe to me how this sort of engraving is done."

Harry took up a knife which lay on the library table, at one end of which was a very fine file. He showed the lines upon the file, which were cut in two directions, obliquely crossing each other. "I believe," said he, "that the copperplate on which a mezzotinto engraving is to be made, is, in the first place, cut all over into fine lines and furrows, like this file; then, if the whole plate were inked over, with the ink used by engravers, and pressed off on paper, there would be only a dark engraving of crossing lines and dots, such as these which we see in this mezzotinto engraving. But when we want to have a design engraved, the outline is drawn upon the plate after the lines have been cut. Wherever the lights are to be, the engraver scrapes away the ridges; and for the strongest lights, where the paper is to be left white, he scrapes away quite to the bottom of the furrows, and polishes the plate smooth in that part.

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For all the lesser lights and shades he scrapes away in proportion, or leaves the ridges as deep and strong as they are wanted. The plate being then inked all over, and pressed down upon paper, and rolled off, the impression of the engraving is made, and in lines and dots like this, or any other mezzotinto print."

Lady Digby thanked Harry, who had worked hard to get through this explanation; colouring redder and redder, as he went on, till it was happily completed. Sir Rupert wrote something at the bottom of the print of his namesake, and then gave it to Harry.

Lucy read with joy these words:—

"For a young friend, whose early admiration of excellence gives the best promise that in time he will himself excel."

Lady Digby found a sheet of silver paper, and a roller, on which she rolled the print; which, by-the-by, some connoisseurs will say is the worst thing she could have done for the engraving. The most experienced assure us, however, that if you roll a print, or drawing, with the back towards the roller, all will be safe.

"Harry, before you go to something else," said Sir Rupert, "can you tell me by what accident, or by what observation, Prince Rupert was led to the invention of mezzotinto engraving?"

"I could," said Harry; "but what use, sir, when you know it already—much better than I do?"

Harry said this in rather a gruff tone, being seized at the moment with a twinge of his old complaint of bashfulness. When he had thought that Lady Digby really and truly, for her own sake, wanted to have the thing explained, he had exerted himself to get through the explanation; but now he thought just what he said, that it was of no use—except, perhaps, to *show him off*, which was what he detested. His father, however, put the matter in a new light to him, by saying,

"It may be of no use to Sir Rupert Digby that you should explain this to him, Harry, but it will be of use to yourself; for you have often found that you are not sure of knowing any thing clearly till you have tried to explain it: and, above all, it is necessary for a man to be able to conquer the sort of reluctance to speak, when called upon, which you feel at this moment."

Harry made a desperate effort, and went on directly, not in the best words possible; but any were better

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than none; and he cleared up, and had more power of choice as he went on.

"I believe—I am not sure—I think, that one day Prince Rupert happened to see a soldier cleaning a rusty fusil, as they called it—that is, a gun—and I suppose, but I do not know exactly how it was—but I suppose Prince Rupert saw the impression of the rusty gun left upon some piece of wood or paper; and he observed, that where the rust had been scraped away most, or least, the impression was the strongest, or the most faint; and the prince, being an ingenious man, thought of applying this to engraving. He thought that if the whole plate for any engraving were *roughed* over, as the gun was with rust, and then scraped away clean, more or less, for the lights, in the way I before described, this might do;—so he tried, and it succeeded. He was the first who ever made a mezzotinto engraving with his own hand; I remember that, for I thought how happy he must have been when it succeeded."

"Oh, I recollect," cried Lucy, "another interesting thing, Harry, which you told me about the prince having suspected his servant of stealing his tool, and finding he was mistaken; and his generosity, you know, about giving him—I forget what—at last."

Harry explained for Lucy that an engraver, who lived at the same time, discovered, by his own ingenuity, the prince's method of engraving, which had been kept a great secret. This engraver made some mezzotinto engravings, and Prince Rupert happening to see one of them, suspected at first that his own servant had secretly taken away his tool for preparing the copper, and had shown or lent it to the engraver: but the engraver convinced Prince Rupert that his suspicion was unjust, for he showed him the tool which he had used—it was a *file;* but the prince's was a *roller*, with small grooves. When the prince was quite convinced that there had been no unfair play, and that his servant had not betrayed him, he generously made him a present of his roller.

Some of the engravings in the portfolio were coloured. There was a set of prints of the odd and pretty dresses of the peasants belonging to different cantons of Switzerland. While Lucy amused herself by looking at their little straw hats, stuck on one side of the head, and their long plaited tails, and their horsehair butter-

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fly-wing caps, Harry was equally happy looking at some engravings which Sir Rupert was showing his father, of Gothic cathedrals and some views in Britton's Architectural Beauties of England. Every now and then Sir Rupert kindly turned to Harry, and stopped in what he was saying, to tell him of the names and use of the different parts of the buildings; and to explain to him, gradually, a little more, and a little more, about the different styles of architecture which have prevailed in England at different periods.

Bedtime came too soon.

"As it always does," said Lucy, "when we are busy and happy."

Lady Digby put into her hand a little lamp, which was so pretty that it was enough to comfort anybody of her age for being obliged to go to bed. The little glow-worm flame burnt bright, within a globe of glass so sheltered, that there was no danger of its being blown out; and the oil in its invisible receptacle was secured from dropping on clothes, carpet, or floor, even in the hands of the careless, who run, or of the sleepy, who slope their candlesticks as they walk. Whisking it over her head, and flourishing it as she went, Lucy proved the value of these properties; and Harry only wished that it was a gas instead of an oil lamp. He hoped to see a portable gas-lamp some time or other.

After breakfast, when letters and newspapers had been read and discussed, Sir Rupert recollected his promise to Harry and Lucy of showing them some of Prince Rupert's drops; and he saw in their eyes their eagerness for its accomplishment.

"Follow me, then," said he, "to the laboratory."

They followed him down stairs, through the hall, into the court, when, turning to the right hand, he stopped at the iron door.

"So it is only the door into the laboratory after all!" cried Lucy, as he opened it. "You were right, Harry, to advise me not to raise my expectations, or to fancy some grand mystery: how disappointed I should have been. Only the door into the laboratory! And why was it made of iron? and why, sir, did you bid us not open it?"

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Sir Rupert told her that this door was made before his time, when the room was used, perhaps, as a place of safety for papers or money; and an iron door was the strongest for defence, and the best security in case of fire. He had desired Harry and Lucy not to open it, because he kept in this laboratory some things which might be dangerous, if incautiously meddled with.

As she entered the laboratory, Lucy was very cautious not to touch any thing, and looked with reverence round her.

Sir Rupert produced one of the drops which they came to see. It was a slender piece of solid greenish glass, about the thickness of a currant, but shaped somewhat like a pear, with a long delicate stalk. Giving it to Lucy, he bid her shut her hand over it, and hold it fast; he then broke off the end of the little glass stalk, and instantly Lucy heard a snapping noise, and felt a smart twinge, as she described it. On opening her hand, which she did with a start, the instant she heard the crack, countless pieces of glass, fine as sand, fell to the ground: this was all that remained of the lump, which had thus shivered to bits. Lucy looked astonished at what had happened, and for a moment remained in silent wonder. Harry asked to have it explained.

"First I will tell you how these drops are made," said his father; "by letting hot melted glass, such as you saw at the glasshouse, fall into cold water."

"I recollect, papa," said Lucy, "that when we were at the glasshouse, I saw a man dropping melted glass into a bucket of cold water; but I did not know what he was doing, and I little thought those were the wonderful Rupert's drops. What else is done to them afterward, papa?"

"Nothing, my dear. After they have been suddenly cooled in this manner, by falling into cold water, each solid drop, or bulb, remains in the tadpole shape you see, each with his slender tail; and they have the property, which you have just now seen, of bursting and shivering to pieces, with a slight explosion, when that tail is suddenly broken."

"*Suddenly* broken," repeated Sir Rupert, "as your father accurately says, Harry. The tail may be ground off gently without bursting the drop. A friend of mine has tried this experiment,"* continued Sir Rupert.

* Dr. Brewster.

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"He told me that he had ground the bulb of one of these drops into the shape of a prism, without any explosion taking place."

"How curious," said Harry. "What can be the cause of this? Why does not the bulb explode when you grind off the neck slowly? and why does it fly into pieces when the neck is snapped off? Why does it explode at all, Sir Rupert? Will you explain the reason to us?"

"I am not sure that I *can*," said Sir Rupert; "but I will tell you what, from all the facts that are known at present, I believe to be the cause;—when a drop of melted glass falls into water, the outside of it, which first touches the water, is suddenly cooled, and becomes hardened and fixed before the inside parts have time to cool. You know, or you should know, that glass contracts as it cools. Now I suppose," continued Sir Rupert, "that the external crust of the drop cannot contract after it has been hardened; and that, as the inner particles continue to adhere to it, so neither can they contract into their proper space. Being thus kept in an expanded state, they are forced to remain beyond their natural distance from each other; and the thin hard crust has, I suppose, but just strength sufficient to retain them in this situation. Harry, do you understand so far?"

"So far I think I do, sir," said Harry.

"Then, by snapping off the tail of the bulb," continued Sir Rupert, "the particles of the glass are supposed to be thrown into a state of vibration, which suddenly detaches them from the outer crust; and, by permitting them to yield to their natural attraction for each other, produces the explosion which you heard. But if, instead of snapping the neck, we grind it away gently, no sudden vibration takes place, and the glass remains unshattered."

Sir Rupert paused—and the moment he did so, Lucy thanked him eagerly, and said she was very glad that she now understood *all about* these wonderful drops, and the reason of their exploding.

Harry, too, thanked Sir Rupert for his explanation, but his thanks were more sober; and he looked as if he was not quite satisfied, and wished to know more.

Sir Rupert smiled, and said, "I am glad to see that you, my young friend, do not swallow an explanation

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without chewing it. Perhaps I have not made what I mean clear to you."

"I think I understand what you mean, sir," said Harry; "that is not my difficulty."

"What then, Harry? Tell me your difficulty."

"I do not know how you are sure that this is the right explanation. That was what I was considering, sir." Harry answered with diffidence, yet without hesitation.

"I am not certain that I am right," Sir Rupert replied, with kindness in his voice and look. "You may recollect that I began by saying that I was not sure I could explain this phenomenon satisfactorily, but that I would tell you what I *supposed* to be the cause of it."

"I remember that you did, sir," said Harry; "but I thought you meant that you could not be sure of your explanation being intelligible *to me*."

"I meant more," said Sir Rupert; "that I was not, and cannot be, certain of it myself, because it has not been proved by satisfactory experiments."

"I wish some good experiments were tried upon the subject, to bring it to a certainty, then," said Harry.

"So do I," said Sir Rupert; "and I am glad that you feel this desire to ascertain the truth by experiment, the only certain way. But, Harry, this is a difficult subject; I advise you to put it by in your mind for future consideration. Remember clearly the facts, and do what you please with the suppositions. Some years hence, perhaps, it may return to your thoughts, when you may pursue it with more advantage than you can at present."

"Yes, when I have more knowledge," said Harry. "I will put it by in my mind, as you advise."

"But I hope you will not forget it," said Lucy, "as I do when I put by things in my mind, and say I will think of them another time: I cannot find them afterward."

"But this is likely to be recalled to your brother's memory," said her father, "when he learns chymistry, and studies the phenomena of crystallization."

"Besides, I shall recollect it from all the pleasure I have had at Digby Castle," said Harry.

"This is one of the many differences between cultivated and uncultivated young people," said Sir Rupert, addressing himself to their father, "that you *can* give them more pleasure than you can to ignorant children. Prince Rupert's drops could only have given the pleasure

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of one moment's surprise—a pop and a start—and a laugh, perhaps, and there would have been an end of the matter with most children."

As Sir Rupert spoke, his eyes chanced to turn upon Lucy, who blushed, and looked very much abashed. When she was asked what was the matter, she said she was ashamed of having so hastily said that she understood all about these drops; she was afraid that Sir Rupert Digby had thought her conceited; and she imagined that, when he looked at her as he spoke, this was what he was thinking of.

He comforted her with the assurance that he did not think her conceited; but he perceived that she was a little too hasty in supposing that she understood the whole when she saw only a part. Of many grown-up old logicians it has been justly said, that they see a little, imagine a great deal, and so jump to a conclusion. "Therefore," he added, "such a young reasoner as Lucy may be excused, and need not be so very much ashamed of herself; but she will do well to try to correct this propensity, and to imitate Harry's caution. It is wonderful," continued Sir Rupert, turning to Harry's father, "that people should have been so long in discovering the simple truth, that all our knowledge of nature must be founded on experiment."

"What other method, then, did they take, sir?" said Lucy.

"They guessed, or reasoned, without trying experiments to prove whether they were right or not," said Sir Rupert. "They laid down general maxims, which they took for granted, because they had been found correct in a few instances."

"That must have been a bad way of going on, indeed," said Harry.

"Yes," said Sir Rupert; "when you come to read the history of the philosophers of old times, and of the *alchymists*, and the *adepts*, as they called themselves, you will see, Harry, what strange work they made of it, and what absurd things they believed were the causes of what they saw in chymistry. Of this there are a thousand instances; but I do not, at this moment, recollect one to give you."

"I recollect one, I believe," said Harry, "which my father told me when we were at the barometer; that before people knew the reason why water rises in a

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pump, they used to say it was because *Nature abhors a void.*"

"A good instance," said Sir Rupert; "and the best, or the worst of it, was, that they were so well contented with this grand maxim, that they never thought of making further inquiry: they became, moreover, so obstinate in error, that they could scarcely see or believe the truth when it was shown to them. You know they were ready to burn Galileo, because he proved that the earth was round, and not flat; and that, instead of the sun moving round the earth every twenty-four hours, it was the earth that turned round on its own axis."

Harry felt gratified and obliged by Sir Rupert Digby's addressing so much of his conversation to him: but what pleased him most was the candour shown by Sir Rupert. Instead of being displeased when his own explanation had been questioned, he acknowledged that it was doubtful, and observed that it ought to be brought to the test of experiment.

THERE was a room at the east end of the library, which Harry and Lucy had not yet seen—Sir Rupert's workshop. He took them into it, and showed Harry his *turning-lathe.* He gave Lucy an ivory box, which his son had turned when he was last at home. The lid was ornamented with a profusion of circles, lying like rings crossing over each other; and within the rings were pointed leaves, one behind the other, each delicately cut, and finely embossed. He showed Harry that simple and ingenious contrivance, the *eccentric-chuck*, by which these ornaments had been produced; and screwing it on the lathe, he not only explained the principle on which it acted, but the endless variety of devices that may be made, either by altering the distance of the centres, or by changing the place of the tool. There was a piece of ivory in the chuck; and when Sir Rupert put the lathe in motion, Harry was astonished at the quickness and accuracy with which these knots of circles were traced, and the ease with which the depth and breadth of each cut were regulated.

While Harry tried his hand and his foot at the lathe, Lucy looked on for a little while, admiring the "flying circle's speed;" but as she stooped to pick up a curled shaving of ivory, which she thought was too pretty to

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be left on the floor, her eye was caught by the words, *Chinese Serpents*, printed on a drawer under the work-bench.

"Oh! sir," said she, "what are Chinese serpents; may I look at them?"

"Yes, you may open the drawer and look at them. You may take them in your hand, they will not bite you."

"Bite me! No," said Lucy, smiling, "I am not so foolish as to be afraid of their biting me. I know they are not alive."

But there ceased her boast; for starting back after stooping over the drawer, she exclaimed, "They move, however! Harry, you may laugh; but I assure you, as I stooped down to look at one of them, he put up his head, and looked at me; and see—there is another coiling his tail. How curious! I do not touch them, nor move any thing that touches them—here are my hands, not even near the drawer, so that I cannot have loosed any spring that could set them in motion—but perhaps opening the drawer did it."

"No; but that is not a bad guess," said Sir Rupert.

"Think again, Lucy," said Harry, "and you will find it out."

"First let me look at this conjurer," said Lucy, pointing to a painted figure of a conjurer, with a long beard, and cap, and wand, of which she saw glimpses under the serpents, at the bottom of the drawer; "May I have him out, sir?" said Lucy; "perhaps he may tell me something: I have a mind to consult him."

"Do as you please," said Sir Rupert; "but I think you had better consult your own sense."

"Yes, yes, so I will," said Lucy. "I am only in joke about the conjurer; but I just want to look at him, because, when I have satisfied my curiosity about him, I shall think better about the serpents."

As she spoke, she cautiously began to put her hand down through the midst of them, towards the bottom of the drawer, to seize hold of the conjurer, but the serpents all rearing their heads or tails immediately, she hastily withdrew her hand.

"I am afraid I shall do some mischief," said she.

"No, my dear," said Sir Rupert, smiling, "you will do no mischief to them, and they will do none to you. There is no danger."

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"Danger! Oh, no, I know that," said Lucy; "but I think Harry had better be so good as to take him out for me."

Harry plunged in his hand, and drew up the conjurer by the beard. "There he is for you," said Harry. "What good will he do you?"

"It is only a coloured print, on a paper case, now I see it in the light," said Lucy. "May I open the case, sir? there seems to be something in it."

As Sir Rupert assented, she opened it: within the case she found a yellow paper, on which were what Lucy called hieroglyphics; and inside were a number of little fish, about twice the length of the mother-of-pearl fish, which are used as counters at a card-table; but these were not of mother-of-pearl, they were of some very thin material—thin as oiled paper, or as goldbeater's skin, and somewhat of that colour. As Lucy looked close, to see what they were made of, they began to move.

Sir Rupert took one by the tail out of the paper, and bidding Lucy hold out her hand, he laid it flat upon the palm; at first it lay still, but in a few seconds began to heave, and move its head and tail.

"Like the serpent," said Lucy; "but how or why they move I cannot conceive, because there is no room for any spring, or any mechanism, Harry, withinside. There is no double skin. He is quite transparent; I can see through him, and there is nothing in him. How he writhes about. But what says the conjurer? What has he to do with it? Let me look at his paper, and try if I can make it out. It is not English—Copenhague—Copenhagen!—It is Danish, then."

"Yes; this conjurer and his fish were brought to me from Copenhagen by an officer, long ago, before they became common in this country; and they afforded us then much amusement, trying the temperaments and fortunes, or at least the tempers and understandings, of those who consulted this conjurer, and took his fish in hand. Here is an English translation of his advertisement for you, Lucy."

Lucy read, and learned that the conjurer promised to tell the temperaments, dispositions, characters, and fortunes of all manner of men, women, and children, by the aid of his fish. Mute, but not still, their motions spoke a language which, as he boasted, could never, like the

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language of man, err or deceive; and this language he, to a certain degree, and in some general points, condescended to interpret for the advantage of all who consulted him, and purchased his hieroglyphic scroll. Opposite to the hieroglyphics, on this scroll, were the interpretations of the different motions of the fishes' heads, and tails, and bodies; also, what was to be inferred from their lying still and motionless.

"Now I understand the directions; and let us try on ourselves," said Lucy. "Hold out your hand, Harry."

She placed one of the fish flat on his palm, and observing its motions, which were quick and sudden, floundering with his tail, she consulted her hieroglyphics, and found that Harry was "sanguine and choleric—fortunate in war."

"That is not true, I can answer for it," cried Lucy, "as far as the choleric and sanguine go. Now try *me*."

"Atrabilarious and melancholious; to die of a broken heart, if not taken in time."

Lucy let fall the fish, while she laughed and exclaimed, "What nonsense!"

The fish fell into some water, which was kept in the workshop for the use of the grindstone. Recovering from her laughter, she said that he was at last in his proper element; yet he did not seem to like it; his head and tail, curling up, met, and he lay with only the middle of his side touching the water, as if he feared to go in.

"Put him quite in," said Harry, "and see what will happen."

Lucy pressed him down into the water, but not without his struggling; however, when he was fairly in for it, as she said, he ceased to flounder, and lay perfectly quiet.

"Now let us take him out, and dry him," said Harry, "and see what will happen."

Harry dried one of his sides, and laid him down in the sunshine.

"Oh! the poor fish," cried Lucy; "he is just as the proverb says, as uncomfortable as a fish out of water. How he writhes about. I'll sprinkle a little water over him."

"Stay, let me dry him quite, and that will do as well, you will see," said Harry; "he will lie quietly then, though he is a fish out of water."

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"Well, try," said Lucy. "Now he does lie quiet, indeed, exactly as if he were dead."

But as she stooped closer to look at him, he seemed to revive, and moved again.

"As if he felt my breath," cried Lucy. "Oh! Harry, I see how it is now—I know it all."

Harry smiled.

"You are right," said Sir Rupert.

"And you knew it all the while, Harry," said Lucy. "I was very stupid not to think of it before."

"You would have thought of it," said Harry, "but that you were so full of the conjurer."

"But even now I do not know all," said Lucy. "I suppose that the motions of this fish depend on the changes from wet to dry; and that he curls and uncurls as my hair does, and for the same reason. I have not forgotten, Harry, all you and papa explained to me about the cause of curling, when one side is wet and the other dry; when the pores are filled with moisture on one side, and not on the other. I understand that that was the case with the fish, when you dried him on one side and left him wet on the other. But I cannot yet guess of what substance he is made."

"Think of some of those substances of which you know hygrometers are made," said Harry.

"Old whalebone hygrometer! I remember you," said Lucy. "You smile, Harry. It is whalebone; but I never saw any before so thin."

"Very likely you never did," said Harry; "but whalebone can be scraped very thin—as thin as this, you see."

"It really is whalebone, then; and I could make such a fish myself," said Lucy. "If my head had not been so full of that foolish conjurer, I might have seen all that you observed, Harry, and then I should have found it out too."

"I dare say that now you will find out what the Chinese serpents are made of," said Sir Rupert.

"They are hygrometers too, then, I suppose," said Lucy, "hey, Harry! What *can* they be made of, do you know!"

"I am not sure, but I believe I do," said Harry.

"Yes, you are right," said Sir Rupert, following the motion of Harry's eye.

Lucy turned and looked, yet she saw nothing, as she said, but dust under the workbench; "and a box full of

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old iron, and brass, and hundreds of things," continued she, going towards it.

"You had better stop and think, instead of going into that box," said Harry. "Look back at the serpents, and see what they are like. Recollect all the substances which you know would make good hygrometers, and then consider which is most like these serpents."

"Ivory!" cried Lucy. "I remember you told me that it has many pores, and that it makes a good hygrometer; they must be made of ivory. And now I know what your eye turned to—it was to that curled shaving of ivory which is lying on the floor."

Sir Rupert, after some conversation with Harry about hygrometers, asked him if he had ever seen Daniel's; and when Harry answered that he had not, Sir Rupert exclaimed, "Let whoever is curious in hygrometers follow me to the laboratory."

Harry followed instantly, but Lucy did not; she thought she had had enough of hygrometers, and she preferred going to divert herself with a canary-bird, which she saw hanging in its cage at the window of the housekeeper's room, on the side of the court opposite to the laboratory. This bird could, as the housekeeper told her, draw up water for itself in a little bucket. She saw this bucket. It was about the size of a thimble. It hung by a delicate chain, on the outside of a sort of projecting bow window in the cage; the upper end of the chain was fastened to the bird's foot, and the bucket lay in a small reservoir of water. The manner in which the bird drew it up was, as the housekeeper told Lucy, by taking the chain in his beak, and by placing his foot on each portion of it as it was drawn up, till the bucket was as high as the little window, where he could drink.

He disliked, it seems, the labour of drawing water, and never performed this operation except when compelled by thirst. Unluckily for Lucy, just before she arrived he had drawn up a bucketful, and having satisfied his thirst, he was now singing away, loud and shrill, as if rejoicing in having cast dull care behind him. Lucy waited and waited; she and the housekeeper exhausted all their exhortations, all the endearing epithets in the language, and all their hemp-seed, in vain. The canary took all the bribes as fast as they were offered, and received all the compliments seemingly in good part—but no return made he; not that he did not understand what

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return was expected. The rogue eyed the bucket askance, as the housekeeper held it up to him; then straight he turned his back upon her, or upon it, and sang away, pertinaciously, with a louder and a shriller note than before. A full quarter of an hour was spent upon him, then Lucy gave it up.

"What an obstinate or capricious little creature it is," said Lucy. She then went to ask Lady Digby whether it hurt him to draw up the bucket.

Lady Digby said she believed it did not hurt him, though she could not be certain; but she thought his unwillingness to perform the operation might be accounted for, by recollecting the pain which he had undergone in learning this feat. It is said that much cruelty is practised on birds, when young, in teaching them this and other accomplishments.

"How happy, Lucy, it is for some young birds, which are taught accomplishments without pain."

Meantime, as soon as Sir Rupert and Harry had returned to the laboratory, Sir Rupert said, "Before I show you the new hygrometer, Harry, I must tell you, that in all those hygrometers which are made of vegetable or animal substances, and which measure the moisture of the air by their expansion or contraction, there is one great source of error—they have no standard point by which they may be readily compared with each other. The great De Saussure, whom you will admire still more for his candour than for his ingenuity, foresaw and pointed out this fault, in his own hair hygrometer; and the celebrated Humboldt, who used both the hair and the whalebone hygrometers, complained that he could never make their results agree. Another philosopher calls all the ordinary hygrometers mere toys,—but without going further, it is enough for you to know, that from this cause all those instruments are found to be insufficient for making nice observations on the atmosphere. They have, besides, other imperfections: no two hairs are exactly similar in elasticity; whalebone is not only very irregular, but very slow in its expansion; the wind disturbs their movements; and dust and oil, in time, clog the pivots. Such are the principal faults of the old hygrometers.

"Now for the new one. You have, I dare say, often observed the dewy appearance on the outside of a glass of cold water when brought into a warm room. This

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dewy appearance, you know, is caused by the condensation of the moisture contained in the air, and it was this circumstance that first suggested to Mr. Daniel the idea of measuring the quantity of moisture contained in the atmosphere by the degree of cold that is required to condense it; as, the damper the air is, the greater will be the facility of condensation. Now, by observing how many degrees cooler than the atmosphere it is necessary to make any substance before dew will be formed upon it, you can obtain the measure of the quantity of water supported in the air. This you might easily do for yourself, by trying how cold a bottle of water must be, to become dimmed with condensation. All that is necessary is to observe the different heights of two thermometers, one in the water and one in the air. It was in this manner that Mr. Daniel tried his first experiments, till he succeeded in making the ingenious instrument which I am going to show you, in which the artificial cold necessary is produced by the rapid evaporation of ether."

He placed before Harry's eyes a brass stand and pillar, five or six inches in height; to the pillar was fixed a small thermometer, and from the top there hung a glass tube, each end of which was bent down, and terminated in a ball, or globe of thin glass. One of these globes was covered with muslin, and the other contained a very delicate thermometer, the bulb of which was partly immersed in ether.

"The first thing to tell you, Harry," said Sir Rupert, "is the purpose of these two thermometers. The outside one, on the pillar, shows the temperature of the air, while the inside one marks the temperature of the ether, and therefore of the glass globe that contains it.

"Now let us place it in this open window; and when I wet the muslin covering of the empty ball with a few drops of ether, you are to observe what takes place on the other ball."

It was what is called a very dry day, and after Sir Rupert had applied the ether two or three times, Harry said that he saw a slight film of dew forming like a ring round the uncovered ball.

"*Now*, Harry," said Sir Rupert, "mark the height of both thermometers.

"You are aware," he continued, "that rapid evapora-

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tion produces cold; and that ether evaporates more rapidly than any other fluid."

Harry was partly aware of this, yet he was surprised by the instantaneous cold produced by a drop of ether that Sir Rupert let fall on the back of his hand.

"When I applied some ether to the muslin," said Sir Rupert, "the glass under it was immediately cooled, and the condensation of the vapour inside gradually communicated the cold to the other ball. The degree of cold there is shown by the inside thermometer, and the *difference* between that and the temperature of the external air, at the moment the dew is deposited on the glass, is the measure we want of the moisture suspended in the atmosphere."

"Then I suppose, sir," said Harry, "the drier the air, the greater is the difference between the thermometers."

"You are right, Harry. If there had been a large proportion of moisture in the air, a very small additional degree of cold would have been necessary to condense it, and you would have seen the film of dew immediately follow the application of the ether to the covered ball. On the contrary, when the air is very dry, a considerable increase of cold is requisite, as you have found to be the case to-day; the inside thermometer having fallen fifteen degrees before the dew was deposited on the ball."

After this explanation, for which Harry was very thankful, Sir Rupert advised him to look at the inventor's own description of the instrument, in the Quarterly Journal of Science, No. 16.

"But first," said Sir Rupert, "let us go out, if you please, this fine day, and have some exercise and some amusement. Remember, the bow must not be always bent. By-the-by, here are bows and arrows, and here is a little bow which Edward had when he was your age, which will just suit your sister Lucy. Call her, and bring her out with you to the bowling-green: I will have the target set up for you."

"An hour and a half! is it possible," said Lucy, "that we have been really an hour and a half here on this bowling-green?"

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"Exactly an hour and a half since first I fixed an arrow in that bow, and settled it in your hand," said Harry; "for I happened to look at the sundial just as I went back to my place."

"We have been so very happy!" said Lucy, stretching out her arm to rest it.

"But now you seem to be rather tired of your happiness," said her father, "and you had better stop before pleasure turns into pain."

"My arm only is tired, papa," said Lucy; "I am not the least tired myself. However, I think we have had enough for to-day, and we can come back to it to-morrow, if to-morrow should be as fine as to-day."

"In the meantime, come with me to the house," said Sir Rupert. "This way leads towards the old part of the castle; I will turn you into a cool armory to rest yourselves, and where, perhaps, you may find fresh amusement in looking at the bows and arrows of former times."

They followed joyfully to the armory: he showed them, in the first place, a bow and arrows, which had remained in this castle—family tradition failed to tell how long; but certainly since the days of our Henrys and Edwards, when bowmen and archers flourished, and when bows and arrows were not, as now, taken up as matters of amusement, by fine gentlemen and ladies, to win prizes at festive meetings, but employed as serious weapons in battles and sieges. Sir Rupert was going on to show Harry the crossbow, such as was in use and repute among our ancestors; but Lucy's eye was caught by an Indian bow and arrow, and he turned to take it down for her. It was stiff with rings of dried thongs of leather, which had been put on the bow to commemorate each savage victory obtained by the owner. Next to this Indian bow there hung another, said to have been brought from Mexico at the time when those poor people, or, unhappily for them, those too rich people, were invaded by the avaricious Cortes, and when their bows and arrows so ill defended them against the fire-arms of the Spaniards. Harry and Lucy regretted the fate of the inoffensive Mexicans, and wished that they had been possessed of the ingenious invention of fire-arms for their just defence.

Sir Rupert went back to the crossbow, and showed Harry how it was constructed and used. The stock

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was made of wood, neatly inlaid with bone, and ornamented with tassels; but the bow was of steel, and so stiff, that Harry's efforts could scarcely bend it. Sir Rupert told him that no person had sufficient strength to draw back the string into its place, without some mechanical assistance, and desired him to examine the bow carefully. Harry observed a long iron lever, the end of which turned upon a pin in the middle of the stock. To this lever a little jointed arm was attached, which terminated in a kind of hook, that seemed to invite the string: he slipped the string over the hook, and pulling round the outer end of the lever down to the but-end of the stock, he easily accomplished the bending of the bow. Sir Rupert then showed them the trigger, or *serpentine*, as he said it was formerly called, by which the string was released, and the arrow or ball projected.

Harry was surprised to hear him mention balls; still more, when he was told that balls both of lead and stone were used. Sir Rupert showed them also various kinds of darts and arrows, one of which, to Lucy's great amusement, he called a *quarrel;* he explained to her, however, that the term was derived from the old French word *quarreau*, on account of its *square* head of iron. Crossbows and quarrels, Sir Rupert added, were much used in the time of Henry the Second. They were of great effect in his wars in Ireland, and assisted much in his conquest of the Irish, who possessed no such weapons.

In this armory were many of the warlike instruments and armour used in ancient times by the English. Sir Rupert showed Harry the *helmet*, the *visor*, and the *lance;* and explained to him how the lance stood in the *rest*, when the knight was on horseback; and showed him all the parts of the knight's armour, with which he cased himself and his horse in iron, so that, as long as he and his steed could hold together, they were almost invulnerable, till his lance was wrested from his hand, or his foot *ousted* from the stirrup. The united weight of man and horse, or their joint momentum, was of great consequence, as the heavier they were, the greater the shock with which they came against their adversary, horse to horse, and man to man. Harry and Lucy were glad to know the exact appearance of all these things, of which they had read in history, as being

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used not only in battles, but in the *jousts* and *tournaments* of former days.

Lucy enjoyed them from the recollection they brought to her mind of many passages in poetry, and from the pleasure she always felt in whatever filled her imagination.

Harry's mechanical taste was gratified by examining the ancient coat of mail, or *hauberk*, consisting of small steel rings, linked together, or interwoven, in the manner that some ingenious purses of steel rings are made at this day.

After Harry had satisfied his curiosity, Sir Rupert took him on to those later inventions, which made of no avail "helm and hauberk's twisted mail." He showed him some of the first rude attempts at fire-arms; the *arquebuse*, or long gun, described by Froissart, used with a rest, upon which it was supported, and with a sort of shelter-piece to protect the match from wet and wind. Between this first clumsy attempt to execute that grand invention, and the perfected Manton's and Forsyth's guns of our own times, various improvements were made, some of which Sir Rupert explained to Harry. Lucy, whose curiosity was not only satisfied, but satiated, went off to seek for amusement and information more interesting to her, in the garden and the conservatory, with her mother and Lady Digby. Indefatigably kind Sir Rupert ended by finding "Froissart" for Harry in the library, and unfolding for him those delightfully entertaining old prints, where the battles of Poictiers and Cressy are represented so happily, though in defiance of all the laws of perspective.

After speaking of the wonderful change which the introduction of fire-arms produced in the world, and of the astonishment which their first appearance created among civilized and uncivilized nations in Europe and America, Sir Rupert related to Harry an account which he had just read in a new book of travels, of a people by whom the power of fire-arms has been even recently defied.

"Between the Nile and the Desert," said Sir Rupert, "there is a narrow strip of cultivated land, which in some places is not more than half a mile in breadth, but which stretches hundreds of miles in length. This strip of land was inhabited by various independent tribes till within the last three or four years, when a despotic

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Turkish pacha, of the name of Mahommed Ali, resolved to send a large army, under the command of his son Ismael, to subdue them. Ismael's progress was unresisted till he came to one warlike tribe, who, with equal courage and patriotism, defied the invader. 'He may drive us to the gates of the world, but we will never submit,' was the answer they sent to his threats."

"Brave people!" cried Harry. "I hope they drove him back again."

"They were heard shouting from their encampment," continued Sir Rupert, "'You may come against us from the north, and from the east, and from the west, but we will never submit.' They knew that the pacha had firearms—they had none—but they put their trust in the weapons and shields to which they had been accustomed, and in their own courage. Their shields of hippopotamus, or of crocodile skin, covered the head and the breast. Their weapons were swords and lances: and their sorcerers assured them that their shields and themselves should be rendered by magic invulnerable to musket-balls.

"Bravely they came out to give him battle, and advanced boldly at first; but when the volleys of musketry began to play, and when they found that, in spite of their promised invulnerability, many fell wounded and killed, a panic seized them, and they fled. After this first defeat, however, they intrenched themselves in their mountains; their courage revived, and again they sent forth shouts of defiance, bidding the pacha 'to come if he dared.'

"But Ismael had learned to respect their bravery: he had once already been surprised, and almost defeated, by the black horsemen of the desert, and he therefore prudently resolved to attack them with a heavy fire of shot and shells. One of these shells fell among them; and as it was rolling and bounding along, these poor ignorant people gathered round it, admiring and amused by its motions; but when it burst, and spread destruction round it, they cried out, 'The evil spirits are come against us, and are too mighty for us.' The superstition that had at first given them confidence, now only increased their despair; and, abandoning their strongholds, they set off in full flight, their patriotism expiring with their liberties. Afterward they bargained for their wretched lives,

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and were contented to join, as his soldier's slaves, the army of their conqueror."

As Sir Rupert concluded, Harry groaned. "Was this," said he, "the end of their glorious 'You may drive us to the gates of the world, but we will never submit?'"

"Even so, Harry; so little dependance can there be on mere animal ignorant courage, that braves the danger of which it does not know the nature or extent."

The glass doors at one end of the library, leading into the conservatory, were half open; and now that Harry's attention was no longer engaged, he observed a gale of fragrance, like the smell of fresh hay, or of that grass which gives to fresh hay its pleasant odour (anthoxanthum odoratum). A second waft, however, decided that it was from Lady Digby's favourite plant, the heliotrope, innumerable pots of which the skilful old gardener contrived to force into premature flower and perfume, so as to have a constant succession for her ladyship's conservatory. He heard Lucy's voice too; and though he was not, as he used to say of himself, a great greenhouse merchant, he now went in there, and found Lady Digby showing some plants, which had been lately sent to her from North Carolina by a kind American lady. There was one which is rather uncommon in these countries, as it is so delicate that, without care, it seldom survives a winter in our climates. It is something of the nature of the sensitive plant; the inside of the leaf is thickly set with bristly hairs, like thorns, or like many little sharp teeth. As soon as Lucy saw this plant, she took up a straw, and drew it along the division or middle rib of one of its leaves, and immediately the two sides of the leaf folded up, and the prickly teeth closed together, so as to hold fast the straw.

"I see it is the plant I thought of," said Lucy. "Venus's flytrap, is not it?"

"Yes, *dionæa muscipula*," said Lady Digby; "have you seen one before?"

No; Lucy had never seen one, but she knew it, she said, from having read a description of it. The gardener by this time had caught a fly, of which he had been in search on the window for some time—for flies

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were few and rare at this season—and holding his struggling prisoner by the two wings, he was going to set him upon one of the leaves, that the young lady, as he said, might see what would happen; but Lucy stopped his hand—she knew what would happen—that the moment the fly touched the leaf, the teeth would close upon it, as they had closed on the straw, and squeeze it to death. The old gardener immediately complied with Lucy's entreaties to release the poor fly; and Lucy observed to him, that there was the less occasion for this experiment, as the many dead flies showed how well some of the leaves had performed their cruel office. "But I really think," she said, "that those fly-killing leaves are larger and greener than the rest."

The gardener answered, that he had often remarked the same thing; and though some folk said that they were fattened and nourished by the dead flies, for his part, he thought it just as likely that it was because the healthy and vigorous leaves had a greater power of shutting close and crushing the flies. "But," added he, with due philosophic caution, "I can't take upon me to decide."

Harry admired the ingenious mechanical structure of this flytrap, and began to say that it reminded him of something which he had seen elsewhere; when Lucy smiled, and said, "I know what you are going to say, Harry, and you are quite right; you mean the plant called the fly-catcher; a sort of *arum*, which smells, as you said, Harry, like a dead horse. And there is another plant, in which mamma showed me the same sort of contrivance," continued Lucy; "but I cannot recollect its long Latin name. I remember that papa lent me a magnifying-glass to look at the dead flies lying at the bottom of its flowers: some were held by the proboscis, and some by the legs. This plant is called in English, I believe, *dogsbane*. Was not this what you were thinking of, Harry?"

"No, I was not thinking of any plant," said Harry; "I was thinking of a machine; a sort of trap, which catches rats in the manner that this catches flies."

Lucy was a little scandalized by this inelegant comparison.

"The flytrap of Venus compared to a rat-trap!" But, on Harry's appeal to his father, it was allowed to be just, as far as mechanics go.

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The gardener thought it was now his turn to get in a few words in praise of the strength and healthiness of his dionæa. It had been sent over from Carolina in sods of its native earth, which still remained in a box to which he pointed. "There were more plants in it," said he; "but they have died; so I shall empty out the sods now, for they are a disfigurement here."

Harry said it would be a pity to throw this earth away; for he recollected having heard, that when the boxes of plants which Peyrouse, in his voyage round the world, sent home to France, were opened, the plants and shrubs in some were dead, yet the gardener did not throw away the earth, but preserved it carefully, because he thought it might contain the seeds of some sorts of plants unknown, perhaps, in these countries; and so it proved.

Lady Digby, upon hearing this circumstance, desired her gardener to put the American earth into small pots, and to place them in a hotbed. "If it should produce any plants that are worth your acceptance, Harry," said she, "you, to whom I shall owe them, shall share them with me."

"Mayhap, master, you might not know what this is," said the gardener, opening another little box, and putting into his hands a small bundle of what seemed to Harry to be black horsehair.

"Is it horsehair?" said Harry.

"It is horsehair," said Lucy.

"No, miss—no, master; though I took it myself for that at first unpacking."

Lucy pulled a bit of it out; and after feeling, said, "It feels like horsehair, crisp, and springy; and it looks so like it that I can hardly believe it is not horsehair."

"Never was on a horse's back, miss, nor ever belonged to any animal."

"Is it animal or vegetable?" said Lucy.

That was soon settled, by Harry's running back to the library, and burning a bit of it; the remains he held to Lucy's nose, and its smell convinced her of that which her eyes had failed to discover, that it was neither horsehair, nor any animal substance. "Then it is a vegetable. What can it be?"

"And what do you think this can be, miss?" said the gardener, putting into her hand another little bundle of something, which Harry said looked like ends of white

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coarse thread, such as he had seen in a tailor's shop, and which he had heard called *thrums*. Lucy agreed that it was like tangled housewife's thread; but on a nearer view, she, who was more knowing in housewifery than Harry, pronounced that it certainly was not thread. Looking at what Harry drew out, and called a needleful, she observed sundry little short filaments, or stalks, and at the end of some of them were little knobs, which, on further examination, were evidently the remains of very small flowers: she pronounced it therefore to be a vegetable; and she was surprised to hear that both this, and what she had called black horsehair, were one and the same thing, only in different states.

"I will, if you please," said Lady Digby, "read to you the account that I received from the American friend who sent them to me."

She returned to the library to look for the letter in her writing-desk, and Harry and Lucy stuck close to her, much afraid that the letter might not be forthcoming; but she found it, and read as follows:—

"'The foliage of several trees here' (near Wilmington, in North Carolina), 'has, in some situations, a singular appearance. A sort of long gray moss suspends itself from the branches, and, waving in the wind, gives the trees a hoary, and, to me, not uninteresting appearance. When stripped of its external coat, this moss nearly resembles horsehair. It is collected for that purpose in large quantities, and buried in marshy spots; and when the outer coat peels off, the inner part is dried and cleaned, and makes excellent mattresses.'"

Lucy's mother observed that the outer coat of flax is destroyed in the same way, by steeping it in water.

Lucy inquired whether this kind of horsehair moss, as she called it, had any name; and whether it was known in England, or was a new discovery. Sir Rupert Digby told her, that though he had never before seen this extraordinarily fibrous *species*, yet he was aware that the *genus*, or family of plants to which it belonged, had been well known to Linnæus, who had given it a singular name, from a singular circumstance.

"It will make me remember the singular name," said Lucy, "if you will be so good as to tell me the singular circumstance."

"You must know, then," said Sir Rupert, "that among the early botanists of Sweden, there was a

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certain doctor, who, having in his youth had an unfavourable voyage by water from Abo, where he lived, to Stockholm, made a vow, the moment he set his foot on dry land, that he would never again venture himself upon the sea. He kept this vow so scrupulously, that, when he was to return home, he took a roundabout journey of several hundred miles, to avoid a passage of a few hours by water. His hatred of water, and his love of the dry land, rose to such a pitch, that he laid aside his family name to take that of *Tillands*, which, in Swedish, means *on land*. You think, perhaps, and so do I, that this doctor made a rash vow, and did not in all this show much sense. But a man may be weak in some things and wise in others. He was wise in botany, and made an excellent catalogue of all the wild plants in the neighbourhood of his residence; in honour of which, and of the whimsical name he had adopted, Linnæus gave the name of *Tillandsia* to this genus of plants, as they are remarkable for their dislike of water. Lucy, do you think you will now be able to remember the name Tillandsia?"

"I think—I am sure I shall," said Lucy.

Sir Rupert further told Lucy, that one of the most severe censors of Linnæus had been so much pleased with the happy choice of this name, that he declared he would excuse in Linnæus a thousand faults for that fact alone.

Lady Digby said her American friend had been so obliging as to send many other curious things in the box, besides the specimen of this moss. "Among others, I am sure, Lucy, you will like to see some pods of cotton in their different stages of ripening. My friend tells me that they grow on a bush from two to four feet high, and that the flower is of a delicate straw-colour. I dare say you may have seen an engraving of it."

"I think I have," said Lucy. "But oh! Lady Digby, before you shut the box, will you give me leave to look at that green leaf—if it is a leaf?"

"You do well to say, If it is a leaf," answered Lady Digby. "Do you know what it is?"

"Is it the *creeping-leaf*?" said Lucy.

"No," answered Lady Digby. "It much resembles the creeping-leaf, or *mantis strumaria*; but this is a different insect: by the country-people in America it is

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called the *catydid*, from the sound of its chirping resembling the frequent repetition of catydid! catydid!"

Lucy examined this insect more closely. It was about the size of a rosé-leaf, of the pale green colour of the inside of a peapod, and apparently of that smooth texture; but upon looking at it with a magnifying-glass, Lucy saw that what had appeared like the veins of a leaf, were the ribs or sinews of the wings; and in the intermediate spaces, which had, to the naked eye, appeared perfectly smooth, she now saw, embossed, innumerable little spots, looking like shagreen.

"Now I see the animal's head, where the footstalk of the leaf seemed to be, and its eyes, nose, and mouth," cried Lucy. "Pray look, Harry! Its head and face are like a horse's head and face in body clothes;—look at its protuberant bladder-looking eye; the mouth, however, is like a pig's, or the ant-bear's, and round its neck it has a curious worked pelerine, standing up like the leather *hood* on the collar of a wagon-horse. But what curious thing is that lying loose in the box, with its green, long-jointed, stork-like legs? What do they belong to?"

Before her question could be answered, her rambling eye fixed with delight and curiosity on a plant which hung flaunting from the top of the conservatory; she asked where its roots were, how it was nourished, or whether it lived on air?

Lady Digby answered, that it was reputed to live on air, as its name of *flos aëris*, or the airplant, shows, and that probably it derives its nourishment from the moisture in the air. "However this may be in its native country, it thrives much better here, if planted in a little light earth, or even in wet moss, as you may perceive, by comparing it with the other specimens which you see twined round that pillar, and which are all planted in pots. This plant, nevertheless, has been hanging, where you see it, for four months; and though it requires much greater heat, it is quite alive. It is frequently watered, and I want to try how long it will live in that situation. But," continued Lady Digby, "if you, my dear Lucy, who are so active and obliging, will run up stairs to the little turret, within my room, you will find a book, with many paper marks in it, on my desk: bring it down to me, and it will tell you something more about this curious plant."

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Lucy vanished, and reappeared, bearing in her hand the proof of her swift errand.

"This is a favourite book of mine and of my son Edward's. All these marks he put in for my edification. I was no botanist, but he and this little volume together have made me fond of what appears to me the most interesting and rational part of the study—that which opens to our view the curious and useful structure of plants, and the progress of vegetation. I like this book for another reason," continued Lady Digby, turning to Lucy's mother, "which makes me rejoice that it pleases young people. Without any ostentation of religious sentiment, it really inspires it in the best and happiest manner. Here is the account of the *flos aëris*," continued Lady Digby. "Will you read it to us? It is very short."

Lucy read:—"'There is one species of the *epidendrum* family, the *flos aëris*, a native of India, that deserves to be particularly distinguished. It is so called, because it grows and blossoms when suspended in the air; and we are assured that, hanging from the ceiling of a room, it will vegetate for years; it is likewise said to be remarkably reviving to the inhabitants, by the fine odour of its blossoms.'"

"That fact," said Lucy's father, "of its hanging from the ceiling of a room, and vegetating for a length of time in that manner, is mentioned, if I recollect rightly, in one of Sir William Jones's letters, written when he was in India. He says, the flos aëris was at that instant suspended over his head; that he had tied its rootless branches to the beams of the roof, and he speaks with delight of the charming fragrance of the blossoms."

"And now," said Sir Rupert, "pray may I ask—I have been very patient while you ladies have had the book to yourselves, with three pairs of hands upon it at once—may I ask the name of this favourite book, if name it have; for hitherto I have heard it called only *it*, or *the* book, or *my favourite* book—has it a name?"

"It has a name," answered Lady Digby, "and a name that will be well known to fame in due time. 'Dialogues on Botany.'"

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Next morning, after breakfast, an express came from the housekeeper's room, to inform Lucy that the canary-bird was beginning to draw up his bucket. Down stairs she ran immediately, and after her followed Harry.

The thirsty little fellow, now working for his own interest, and with his own good-will, soon performed his task, and earned his thimbleful duly raised. When lifted to the proper height, he held it, by keeping the collected chain fast under one foot. Then he dipped, shook his beak, and dipped and shook again, much to his own delight and to that of the spectators. When he had fully satisfied his thirst, he began to favour the company with a song; but his notes, even when joy tuned his throat, were so loud and shrill, that his mistress, the housekeeper, soon threw a white handkerchief over the top of his cage to reduce him to silence, so that, as she said, "she might hear somebody speak besides him."

Lady Digby, who had followed Lucy to see her friend, the canary-bird, perform its little exercises, confirmed Lucy's hopes, that birds may be taught by gentle methods, when young, many of those feats which are generally acquired by the infliction of so many tortures. She had, when abroad, as she told Lucy, known a German music-master, who was very fond of birds, and who was most expert in teaching them. He assured her that he had himself instructed a bullfinch, which he would venture to say was as accomplished as any of its kind in all Germany, where these birds are chiefly born and bred; and he had never used hot knitting-needle, or any other instrument of torture, in its education—only soft words, and sometimes, he acknowledged, a little wholesome fasting. Lady Digby recollected that this judicious bird-fancier, or bird-instructer, further told her, that he always taught his pupil at the dead still hour of midnight, or when all the rest of the family were asleep, and when there was nothing to distract the bird's attention. Then he would play tunes for him on the violin. The bullfinch seemed to take no notice, and never attempted at the time to follow him, but the next day he would practise by himself, and at last bring out the tune he had heard at night.

Lucy's attention was now called off to a basket of lavender, which a maid at this instant brought into the

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room. The housekeeper was going to make her annual store of lavender-water: the *still* was ready, and Lucy wished to see the operation of distilling; but Harry whispered his advice to her, to wait and see it performed in the laboratory. Looking out of the window to the other side of the court, he observed that the iron door was open, which was a sign that Sir Rupert was in the laboratory; and on this hint Lucy immediately ran there with Harry, and found Sir Rupert and their father.

Fortunately for Lucy, Sir Rupert wanted, for the experiment he was then trying, to have some water that should be perfectly pure; that is, quite free from all mixture of earth, or salts, or other substances; and for which purpose it was to be distilled. This was a simple process, which Lucy could understand. Sir Rupert had just prepared his *alembic*, the apparatus usually employed in distillation for chymical purposes. It was a pear-shaped glass vessel, into which the liquor to be distilled was put; a lamp was placed underneath, by the heat of which the liquor was made to boil, and the vapour that rose was condensed in the cover, which was a conical-shaped cap of metal, with a *beak*, or spout, that sloped downwards into another vessel, called the *receiver*.

"These drops," said Sir Rupert, "which you see running off from the beak, are collected in the receiver; and the liquor thus collected is said to be distilled. All distillation is performed upon this principle, though the apparatus is different for different purposes, and sometimes made of copper."

"I have heard of a *worm* used in a still; what is that?" said Lucy.

"The worm is a spiral tube, so called from its resembling the form of a worm; its use in the still is the same as that of the cap over this alembic,—to condense the hot vapour."

Lucy asked why the worm was used instead of the cap.

"Because," said Sir Rupert, "it exposes more cold surface to the vapour. Suppose the whole pipe to be unwound and laid open, you would then perceive what a large surface there would be. Besides which, the colder the worm is kept, the quicker the condensation proceeds; and a worm, or a long pipe coiled up, is very

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conveniently placed in a vessel of cold water, which may be changed whenever it becomes warmed by the hot vapour that communicates its heat to the metal worm."

"I understand it now, thank you, sir," said Lucy.

She perceived that, in fact, though the apparatus was different, the thing done was no more than what she had formerly seen when she was six years old, when the cold plate was held over the vapour of boiling water that issued from the top of the tea-urn. She recollected something of the account of distillation in "Conversations on Chymistry," and, searching for the book in the library, she refreshed her memory by reading the passages over again at this moment, when she had the advantage of seeing the real things, and perhaps of seeing the experiments tried.

She there found that *sublimation* is the name given to the process of distillation, when applied to solid substances.

"Sublimation—a sand-bath—flowers of sulphur," she repeated, wishing earnestly that she could see all these things.

Sir Rupert said that, as the sand-bath was now heated over his little stove, for his own experiments, he could easily gratify her curiosity. If she pleased, he would, however, instead of flowers of sulphur, let her see flowers of *benzoin*.

He put into her hand a small lump of a brownish substance, which he told her was benzoin: and that it was a *resin*, or more properly a *balsam*, obtained from certain trees which grow in the East Indies, chiefly in the island of Sumatra. From this substance flowers of benzoin are obtained by sublimation, in the same manner as flowers of sulphur are produced. Lucy watched the process.

The benzoin was put into the glass alembic, which was placed in the sand-bath; and this she saw was merely a cast-iron vessel, containing a quantity of sand. Sir Rupert explained to her that the heat was more uniform, and could be better regulated by means of the hot sand, and that there was less danger to the glass than if it were exposed to the direct heat of the fire. He told her also that chymists make much use of a bath of boiling water; and that in some arts, tempering certain kinds of springs, for instance, workmen use baths of

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melted lead, or tin, or some other fusible substance, because the exact temperature at which these metals melt being known, the proper heat may be applied with the greatest precision.

In a short time the benzoin began to swell; the resinous parts and other impurities with which it had been combined remained at the bottom of the alembic, but the volatile parts flew off, and were condensed by the cold cap. These were the flowers, and were different from what Lucy expected to see. They were more like flakes of snow than any thing else to which she could compare them. While she was looking at them Harry ran out into the yard to the gardener's boy, whom he saw coming in from the garden, with a basket of herbs on his arm. From his basket Harry plucked a sprig of rosemary, and returning without letting Lucy see what he had in his hand, he sprinkled it over with flowers of benzoin, and then held it before her eyes.

"It looks exactly as if it were covered with hoar frost!" cried Lucy. "How beautiful! I shall never forget this, Harry. But here are the horses coming out for Sir Rupert and papa to ride, and so there is an end of all things—at least in the laboratory, for this day."

Battledoor and shuttlecock was kept up one rainy morning by Harry and Lucy—believe it who may, boast as much who can, two thousand three hundred and twenty-four times. They had also many a game of ninepins in the great hall, where, prolonged by its echoes, was often heard the heart's light laugh, at the fall of the merry men all.

But all these the promised joys of Digby Castle, each proving greater in the enjoyment than the promise, were exceeded by the delights of the workshop and laboratory. Every morning they watched for the moment when Sir Rupert moved towards the iron door: Avicenna never watched more anxiously the famous library door, that opened but once a year.

One morning Lucy observed a shallow drawer on the table between her father and Sir Rupert, and in this she saw some things which she thought might be very useful to Harry. The drawer contained many lenses of telescopes, and glasses of different sizes; some as large

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as that of Harry's camera-obscura, which had been so unfortunately broken. It occurred to Lucy that the loss might now be repaired. She waited till Sir Rupert was not busy, and then she asked him whether these glasses were very precious, too precious to part with, or whether she might beg one for Harry? Sir Rupert said that they were precious to him, because he was repeating some beautiful experiments of Dr. Brewster's and Mr. Herschel's, on the magnifying powers of telescopes; but he desired to know which Lucy wished for, as possibly that one might be spared.

She looked at the variety that lay before her, but which of them she wanted she could not tell. It was in vain to consult her father's eye: it never moved. Sir Rupert stood by with his good-natured smile, waiting her decision, but without giving any direction to her choice.

"If I could but recollect exactly the shape of the old glass in Harry's camera-obscura," said Lucy. "What I want is a glass that magnifies; of that I am sure. These which are convex magnify, I believe. But," continued she, after having looked through several of them at a word which was written in small characters on the front of the drawer, "I find that some of these glasses magnify much more than others; and another thing I perceive, that, as I move each glass nearer or further, there is one particular distance at which the object appears distinct, but that the distances are quite different for different glasses. I recollect hearing you, papa, telling Harry something about the *focal distance*. But I had better not say any thing about that, as I do not understand it. I cannot tell which of these convex glasses will suit the camera-obscura. However, I know the sort that I want should be convex."

"Very well, my dear," said Sir Rupert; "that is indeed all that you can tell, or that can be known without trial. You shall therefore take several of these convex lenses home with you, and Harry, by trial, can determine which will best answer your purpose."

Lucy was very much obliged to Sir Rupert, and delighted, that through her means her brother's camera-obscura was likely to be mended. But, now that her curiosity was excited, she wished to know more.

"Why, papa, do convex glasses magnify, and concave glasses diminish? I wish I knew. I wish I could un-

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derstand the camera-obscura. Mamma says, that *camera-obscura* is Italian for dark chamber."

"So far so good for the name," said her father; "but in this case the name tells us nothing of the nature of the thing."

"Yet, papa," said Lucy, "the first time you showed Harry and me a camera-obscura, it was in a large dark room."

"Was it quite dark?" said her father.

"Not quite: the shutters were all closed, but there was a little hole in one of them, through which the rays of light came. We saw images of things very faintly upon a white sheet, which you had hung up opposite to the hole. What we saw was a sort of coloured shadowy picture of the landscape that was outside of the window; and I remember that all the images were upside down."

"True," said her father. "You observed that it was very faint and indistinct; did it remain so?"

"Oh no, papa; it became afterward quite distinct, and almost as bright as the natural colours of the trees and grass, and we saw the figures of people as they walked past, in a field at a little distance from the window. I saw the colour of the women's red cloaks, and their faces, quite plainly; and the figures were not upside down, as before."

"And what made these differences?" asked her father.

"It was a glass, a lens you called it, which you put into that hole in the window-shutter; just the same way as the glass makes the landscape appear brighter on the paper, in Harry's portable camera-obscura."

"Do you recollect how or why the lens produced this effect?" said her father.

"No, papa, not exactly. Harry explained to me afterward something about it, but he could not tell me all; he said he did not know all then."

"All! no, indeed," said Harry, "not then, nor now."

"Tell us all you remember, if you remember anything of what he did explain," said her father.

"First he told me," said Lucy, "why we see the shapes and colours of things. He said it was by the rays of light which come from them."

"Come from them how?" said her father; "do you mean come out of them?"

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"No, papa: but the rays of light go from the sun and strike upon objects, and then come from them to our eyes; or, as people express it, are *reflected* by those objects. Harry next told me something which I thought I understood at the time, but I am not sure that I can explain it."

"Try," said Sir Rupert.

"Harry showed me, in a book, an engraving of an eye, with lines representing the rays of light coming from all parts of an object, and meeting in an angle at the eye. He told me that objects appear to us great or small, according to the size of that angle. Next he told me that our eye is in some way like a camera-obscura. There is a little hole in the middle, through which the rays of light pass, as they pass through the little hole in the window-shutter into the dark room; and after having crossed each other, they make a small picture of the object—I do not know where exactly, somewhere at the back of the eye, I believe, and upside down, as we saw the objects at first on the white sheet; but in the eye these pictures must be extremely small. Something more Harry said about a part of the eye which he called the *crystalline humour*, and about the rays of light being bent as they pass through it, which I think he called being *refracted*, but which I did not understand at all."

Sir Rupert observed that Lucy did well not to attempt to go farther than she knew clearly. There is hope, he said, of teaching any thing to those who perceive and acknowledge when they do not clearly understand, and who are not satisfied with confused notions. Lucy was glad to hear Sir Rupert say to Harry that his little pupil did him credit; and that she was not like little conceited misses, who, instead of wishing to learn in order to improve, desire only to display a smattering of knowledge.

"I am glad, my dear Lucy," added her father, "that your curiosity has been raised on these subjects. But we cannot, at present, assist you further. Only keep what you have steadily in your mind, and from that you may go on hereafter. With Harry's help, assisted by his favourite book, 'Scientific Dialogues,' and with your own attention, you may learn what you desire, but not all at once. You must not expect to learn Optics in one morning."

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It was in the second week of their visit at Digby Castle that, one morning, as Harry and Lucy were left alone in the workshop, Harry whirring happily at the lathe, he felt Lucy suddenly touch his arm, and saw her looking up in his face, as if eager to say something. Rather reluctantly he slackened the whirring motion, and held back the tool.

"Well, what do you want, my dear?"

"I want you to come with me, I have made a discovery! Follow me, Harry."

Harry laid down his tool and followed.

The workshop was a large irregular room, surrounded by shelves and drawers, and racks for tools, with various benches for carpenters and carvers, and for brasiers and smiths; three lathes were placed obliquely to the windows: in the middle of the room stood a circular saw machine, a lapidary's wheel, and a treadle blowpipe; and there were two flagged recesses, partly screened off, and contrived for a camp forge and a small casting-furnace. There was another recess, elevated two or three steps above the floor, which contained some tall models, and behind these Lucy had discovered a door, which, being unlatched, she had pushed a little more open, and now throwing it quite back, she said, "Look, Harry, at what is in that room." He looked in, and his eyes sparkled with joy.

"An electrical machine! a great battery!"

But with his foot on the threshold he stopped, and laying his hand on her arm, said, "Do not go in—I do not know whether we may—I hope you have not been in there?"

"Oh no," said Lucy; "I would not without asking you."

"And I must not, without asking Sir Rupert. But Lucy, when you first saw this, what did you think it was?"

"Oh! I knew directly that it was an electrical machine," said Lucy.

"You never saw one before, that I know of," said Harry. "I saw my uncle's, but you did not; it has been packed up ever since you came home from aunt Pierrepoint's."

"Very true; but I have seen a print of one, with *electrical machine* written underneath; and I knew it direct-

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ly from that; but I do not understand any thing about it. As you saw my uncle's real machine, you can explain this to me. We need not go in, Harry; but just as we stand here, you might show me the use of all the parts. First, tell me the use of that glass cylinder, which is something like a broad grindstone of glass, with a sort of a silk curtain hanging over it, and a long windlass handle; and I see a chain, and—"

"Yes, yes," interrupted Harry, "you see a great deal, of which I cannot explain to you the use."

"Why not?" said Lucy.

"You had better ask my father, or Sir Rupert," said Harry.

"So I will, then," said Lucy, "for I am exceedingly curious about electricity; I want to know all about the electrical kite, and the Leyden vial, and conductors and non-conductors, and electrics and non-electrics, and electrics per se."

"My dear Lucy," cried Harry, "how comes it that you know all these names, which you rattle off so finely?"

"I thought I should surprise you," said Lucy, laughing.

"I do not remember my father ever having talked of them to you," said Harry, "and I am sure I never did."

"No, you never did; but I heard them at aunt Pierrepoint's, and I will tell you how it happened. It all began from a bit of wit. One day, when there were a great many visiters, they were talking of a lady who was very delicate—very nervous. Aunt Pierrepoint advised her to try electricity; and a gentleman said he would answer for it that the Leyden vial would do her more good than any other vial in the world. My aunt smiled, and everybody smiled, and said he was witty. When the company had gone away, I asked my aunt what he meant? She said 'only a *jeu de mot*, child, a pun.' I asked what the Leyden vial was? She said it was rather a glass jar than a vial, and that electrical people, with their machines, contrived to fill or charge these jars with electricity. I asked what electricity was, but she had not time to tell me any more then. She was in a great hurry dressing.

"A few days afterward some of the same people came again, and I heard that the nervous lady had received two or three *shocks*, and was wonderfully better—was quite set up again; and that electricity had cured some

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old duke of a palsy in his arm: he had lost the use of it, but after one shock he could carry his glass to his mouth. Then everybody said electricity was a wonderfully charming thing. But the week afterward I heard that it was all a mistake; that the duke's arm had fallen back again, and that the nervous lady was as low as ever. Then they talked of people that had been knocked down, and a Professor Somebody, that had been killed formerly by electricity; and an old lady said there should have been an act of parliament against it from the first. Then they talked of an electrical kite, and conductors, and lightning. I asked aunt Pierrepoint again afterward what was meant by an electrical kite and conductors. She told me that they were talking of the great Dr. Franklin's kite; that he was a wonderful man, and had a wonderful kite, which brought lightning down from the clouds; and that he was the inventor of conductors for houses and churches, and people in thunder-storms; but she said she could not explain more to me without being a professor of electricity, which she did not pretend to be. Now, Harry, as you say that you saw my uncle's electrical machine when I was away, you can explain it all to me."

"I am afraid not," said Harry; "my uncle showed me several entertaining experiments, and I found in the closet within my room a most entertaining book on electricity, which I once sat up reading at night till my candle was burnt out. There was an account of Otto Guerick's making and whirling a sulphur globe, and seeing, for the first time, sparks and flashes of light come from it in the dark. Then I got to the Leyden jar, and the first electrical shock, and Franklin's sending up his kite in the thunder-storm. I was exceedingly happy that night; but I believe my head was as much puzzled as yours was at aunt Pierrepoint's. In the morning, when my mother found I had been up half the night, she was not pleased, and she made me promise not to do so again, and I never did; I only got up as early as possible in the morning, and at every spare minute I was at the book in the closet. It was a great thick quarto. My father, however, stopped me before I had got half through it: he said it was not fit for me; and it is true, I did not understand half a quarter of it *then*, but I think I could *now*, and I wish I could see it again."

"But, Harry, why did you never tell me all this be-

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fore?" asked Lucy; "and why did you never mention to me the electrical machine, or Leyden jar, or even electricity?"

"I had my own reasons," said Harry. "One was, that you had not *come up* to electricity before we began our journey; and indeed I was afraid of puzzling you, because I had been puzzled myself. I thought, too, that my father could tell you better whenever he pleased; besides, I was not clear that he would like my going back to electricity then. But I dare say—I mean I hope, he will have no objection to it now, and that Sir Rupert will show us some experiments with this machine. I will go and ask my father what he thinks about it," concluded Harry.

"Let us go directly, then," said Lucy; "and while you are asking papa, I will ask Sir Rupert if he will at least give me an electric shock."

"No, no; first let us be sure of my father," said Harry.

"I am sure he can have no objection," said Lucy; but when they asked him about it, Lucy observed that, though he seemed unwilling to refuse their request, yet he looked somewhat sorry that it had been made—she did not know why. However, as to the essential point, he made no objection to her having a shock, and seeing the electric spark. He approved of their seeing some of the experiments mentioned in Scientific Dialogues; such as that of the pith balls, and of the poker, and that for which Harry especially pleaded, as he was sure it would divert Lucy—the experiment of the dancing paper figures. In short, their father said that he could not object to their seeing any electrical experiments which their friend, Sir Rupert, might think proper to show them. He could trust safely to his judgment in this and in every thing that concerned Harry. To him they next went.

They found him in the library, settled in his arm-chair, reading, and looking so comfortable that they did not like to disturb him. He was indeed very happy, looking over a new pamphlet that interested him particularly—"An account of the late M. Guinand, and of the improvements made by him in the manufacture of flint glass for large telescopes." Harry and Lucy hesitating, went up to his chair, one to each elbow, and stood still, looking behind him at each other: they had a mind to retreat without making known their request; but he

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looked up, and, smiling kindly, asked what they wanted. They told him; and when he found that, notwithstanding their great desire to see the electrical machine, they had not been farther than the threshold of the room, he half rose from his chair; but, sitting down again, said, "I must finish this passage first. You may read it over my shoulder if you will. I cannot leave the story in this note half told."

"While making this glass, M. Guinand never permitted any person to be present except his wife and son, who assisted him. On these occasions they were generally secluded for many days and nights in his little laboratory; but when he had completed the operation, if the result was favourable, his friends and neighbours were admitted, and partook of some refreshment while offering their congratulations.

"A year or two before his death, M. Guinand tried an experiment on a larger scale than he had previously attempted. After much exertion, he had succeeded in producing a perfect object-glass of eighteen inches diameter. This glass had been put into the oven for the last time, in order to be gradually cooled; and the operation being now considered as completed, the friends were, as usual, admitted. In the midst of their congratulations on this unprecedented success, after an unusually long seclusion, the fire by some accident caught the roof of the building. On this alarming occasion, all present exerted themselves; and after some trouble, the flames were extinguished; but not before some water had found its way into the oven, and destroyed its precious contents!"

"Ah! poor M. Guinand," cried Lucy.

"I hope he was more successful the next time," said Harry.

"He was nearly eighty years old, Harry," said Sir Rupert; "and the discouragement caused by this misfortune, and the great expense of those experiments, prevented his attempting any more on a similar scale before he died. I should have told you that he was a poor watchmaker, in a country village in Switzerland, and that neither artists nor philosophers have ever succeeded in making glass equal to his."

Sir Rupert laid down the book with the air of a man who makes, but is willing to make, some sacrifice; and he attended his young friends to the electrical machine's

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room, as Lucy called it. She watched every thing that was done. Harry went to the handle of the glass cylinder, and was going to turn it, but Sir Rupert stopped him, as he said that he had something to show Lucy first. He took up a glass tube, and rubbed it with his silk handkerchief; then holding it to Harry's head, Lucy saw the hair rise up, and bend towards it, and a feather on the table jumped up, and hung to it, as Sir Rupert held the glass tube near it.

"Just like what I have seen Harry do with the glass stopper of the decanter after dinner," said Lucy. "And I have seen the same with a stick of sealing-wax, after it has been rubbed on a coat-sleeve: and I remember long ago, when we were little children, that we used to play with an amber egg of mamma's; and that little bits of paper and feathers stuck to it just so."

"True," said Sir Rupert; "this property of attracting light bodies was observed in amber hundreds of years ago, by the ancients. The Latin name of amber, which is derived from the Greek, is *electrum;* thence our word electric, and electricity. All that was originally known about it, to the ancients, was this power of *attracting* light bodies; remember, I say *attracting*, Lucy. Did you observe any thing more when you amused yourself with your amber egg, and the bits of paper and feathers?"

"Yes," said Lucy, "we saw that after a time they would jump no more; they stood quite still, or they jumped back. I recollect, do not you, Harry? that they jumped forward and backward alternately."

"That is," said Sir Rupert, "that they were alternately *attracted* and *repelled*. I am glad that you observed, and have remembered that; you will now understand what I mean by the *repellent*, as well as the attractive power of amber. But this repellent power was never observed by the ancients, nor known to the moderns till about a hundred and fifty years ago, when it was thought a great discovery."

Lucy expressed some surprise that this had never been observed until so lately. Sir Rupert smiled, and said, "There is more to be seen and known about amber, with which, perhaps, you are not yet yourself acquainted. Did you ever see sparks, or a flash of light, come from amber after it has been rubbed? or did you ever hear a little crackling noise from it?"

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"Never, sir," said Lucy.

"Nor was it likely that you should," said Sir Rupert; "because your amber egg, probably, was not a sufficiently large piece of that substance to produce the effect; but sparks have been seen from a large smooth piece of amber, and this observation created much surprise when first it was made, which was about the same time when its repellent power was, as I told you, discovered. Then the same properties were observed in jet, sulphur, resin, and glass; and still the same word, the same *name*, electricity, was used, to express the supposed cause of all these properties, in whatever substance they were found. To those substances in which, after using friction, these properties appeared, people gave the name of *electrics*, and to those from which they could not be obtained by any degree of rubbing they gave the name of *non-electrics*—amber, sealing-wax, and glass, for instance, are called electrics. This table, and the poker, for example, which you might rub with your hand for ever without making them attract light bodies, and without obtaining from them any sparks, are called non-electrics. But take care, Lucy, that this name of non-electrics does not mislead you into taking it for granted, that in non-electrics there is no electricity. When we come to your brother's favourite experiments, I shall show you that the electric spark can be obtained from the poker by other means. Experiments tried by various people, at different times, in different countries, within the last sixty years, have ascertained, that not only in the poker and in the table, but in every substance in nature with which we are acquainted, solid or fluid, vegetable, animal, or mineral, in earth, air, and water, electricity is to be found, though in various proportions, and to be obtained, or made apparent to our senses, by different means. Remember, then, that *non-electrics* is only the name given to those bodies from which electricity cannot be had by friction; and when I use the word electricity, I mean the supposed cause of the electrical properties of bodies. I must, however, observe, that as yet we are imperfectly acquainted with this science; and, of what is known, I know but a small part, and of that I can explain very little to you. However, some of the principal facts I can tell you, and some of the principal *phenomena*, or appearances, I can show you. In the first place, before I

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say any more, we will show you some electric sparks; and you shall have an electric shock, which you are so curious to feel. Turn the handle of the glass cylinder, Harry."

As he worked it, Sir Rupert showed Lucy that the glass cylinder, as it revolved, rubbed against a cushion, which was fixed so as to press hard against it. This cushion, he told her, is called *the rubber*. "Instead of rubbing with the silk handkerchief, as you saw me rub the glass tube, friction is in this manner more conveniently produced."

When this had been done sufficiently, Harry held his knuckles to a brass knob at the end of a tin cylinder belonging to the machine, and which Sir Rupert told them was a conductor; immediately Lucy heard a slight crackling noise, and saw sparks come either from the brass to Harry's knuckles, or from Harry's knuckles to the brass—she did not know which, they passed so quickly. She followed his example; and holding her knuckles to the brass knob, felt, with some surprise, the tingling sensation produced by the electric spark. Sir Rupert now told her to stand upon a little wooden stool, with thick glass legs, which he set on the floor near the machine. He desired her to hold a chain, the other end of which was fastened to the conductor. After the handle of the glass cylinder had been again turned sufficiently, he told Lucy to give her hand to Harry. She exclaimed, that she felt the same tingling sensation she had perceived before, on touching the knob from the conductor.

"Yes," said Sir Rupert, "you acted the part of a conductor, and Harry received an electric spark from you."

He now told her to get off the stool; and said that he would give her an electric shock, if she pleased, but warned her that perhaps she might not like it.

"Then give me only a little shock, sir, if you please. A *very* little shock, my dear sir, pray!"

Sir Rupert promised that it should be very slight. He desired her to hold in her left hand a chain that touched the outside of a glass jar, which Sir Rupert told her was a Leyden vial. He put into her right hand a bit of brass wire, with which he told her to touch the brass knob fixed on the top of the jar. She did so, and at that instant she felt a shock. Slight as it was, it made Lucy start violently. At first she thought Harry had given

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her a blow on the elbow—then holding her elbow fast, she said that her curiosity was satisfied; and that if this was the famous electrical shock, she never desired to feel it again.

Harry could not help laughing a little at her start and surprise, which seemed to him so much greater than the occasion deserved. Recovering, Lucy began to look a little ashamed. Sir Rupert observed, for her comfort, that great philosophers had been not a little frightened when first they felt the electric shock.

"Philosophers! sir," said Harry; "how did they show that they were frightened?"

"By the strangely exaggerated accounts they gave of their sensations. One gentleman, after his first shock, wrote to a friend, that he felt himself so struck in his arms, breast, and shoulders, that he lost his breath; that he was two days before he recovered from the effects of the blow and the terror; and that he would not take a second shock for the kingdom of France. Another, after trying the shock from the Leyden vial, said his whole body had been affected with convulsions, and that he felt as if a heavy stone lay upon his head."

Lucy hoped it would be remembered that her little start and first fright had all been over in a minute or less, "instead of lasting two days, Harry. But I suppose," added she, "that their shocks must have been much greater than mine."

Sir Rupert said that the shocks they received could not have been much more violent than what she had felt.

Harry asked how he could be sure of that. Sir Rupert answered, that as they had described the apparatus they used, an estimate could be formed of the utmost power of the shock which they could possibly have received. "They used only a small glass bowl," said he, "and not *coated*, as the Leyden vial is now; they had no electrical battery, nor any means by which they could give a powerful shock."

Lucy observed that Harry was perfectly satisfied by this answer, therefore she was sure that he understood it; but, for her part, she did not in the least comprehend what Sir Rupert meant. She was very desirous to know more; but so many questions occurred to her that she could scarcely tell which to ask first. She wished to know why she had been made to stand upon a stool when she gave Harry the electric sparks; or why the

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stool, unlike all others, had legs of glass. She wished to know what was the cause of her receiving a shock from touching the knob on the Leyden jar with the wire. But her first question was, to Sir Rupert's surprise, "Has this electric shock been really of any use to sick people, or to men or women in palsies?"

Sir Rupert said he did not know. It had at first been thought to be of medical service; and it was said to have restored persons to the use of their limbs; but afterward this had been doubted, and the apparent or transient advantage was ascribed to the effect on the imagination.

So far Lucy had not obtained much more actual knowledge than she had had before; but the diffidence with which Sir Rupert spoke, gave her an idea of the great caution and modesty of real philosophers' speech; so unlike the rash assertions of half-informed persons, or of conceited pretenders to science.

In compliance with Harry's request, Sir Rupert next showed Lucy some of the first experiments which Harry had seen at his uncle's; which need not be detailed here, as an exact description of the experiment of the *pith balls*, and of the *poker*, and of the *dancing paper figures*, may be found in Scientific Dialogues, illustrating the nature of electric attraction and repulsion. Lucy was amused with these experiments, but she could not take in all the explanations; she became a little confused and puzzled about conductors and non-conductors; which, having candidly confessed, Sir Rupert advised her to stop, assuring her that he would, at another time, when her mind should be rested and refreshed, return to the subject; and promising that he would reward her candour by doing his best to make it clear to her; which, he added, he did not doubt but he should be able to accomplish, if she would not either despair or be in a hurry—if she would only have patience with herself, and with him, and allow to both sufficient time. "And now," said he, "I shall be glad to return to my pamphlet; and you and your brother will be glad, I think, to take a good run or a walk. Suppose we take the walk Lady Digby was talking of, across the fields, through Copse-wood, and over the ford, to Farmer Dobson's. Ah! ha! you like that; I never knew young people that did not prefer a difficult to an easy—I will not say a dirty to a clean—walk. Well, by the time bonnets, and

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hats, and walking-shoes are on, and papa, and mamma, and Lady Digby, and all assembled in the hall, ready for a march, I have a notion I shall have done my pamphlet, and be with you too."

This walk was as rambling and as scrambling, with as many hedges and ditches to get over, and as many bad passes and unstable stepping-stones to cross, as hearts of youth could desire, or legs of age accomplish.

Farmer Dobson, the snuggest of yeomen, and the best of tenants, met the party at his outermost gate with a warm welcome for his landlord, and his landlord's friends, whomsoever they might be. His eye brightened when he saw young folks. "He had a power of his own, thank God for them," he said, as he opened wide the house door. "He loved young folks," he added; and requested that they would all be so agreeable as to come in and rest themselves after their long walk.

After they had sat for some minutes, and after orchard, and poultry-yard, and farmyard had been all duly visited, and that it was time to think of returning home, Harry and Lucy's satisfaction was completed, by the farmer's assuring them that, if they had any misliking to go back the same road they came, they might return quite a new way, "by passing through Topham Turnstile, and Higglesham Pike, down the fields of Red-deer manor, and so getting, by the short cut, straight up the back way to the castle."

Harry listened most attentively to these directions; but as he did not know any one of the places named, it might have been even dinner-time before they reached Digby Castle, had he persisted in acting as avant-courier; but he gave up the point at Higglesham Pike, whence, under the straightforward guidance of Sir Rupert's cane, they reached home by the usual hour for luncheon.

Sir Rupert looked at his watch, and finding that he had ample time, sat down to write some letters; telling Harry and Lucy that, when the clock should strike next, he would be ready for them at the electrical machine.

Punctual as the clock, Harry and Lucy were opposite to the electrical-machine; and Sir Rupert, equally punc-

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tual, shut the door after him ere the clock had done striking.

"Lucy, my dear," said Sir Rupert, "I hope you have put out of your head whatever it was that puzzled you about conductors. The name of conductors is given to all substances which conduct electricity from one body to another. Those which will not do this we call non-conductors. Is this clear to you?"

"Quite clear," said Lucy. "I do not know what puzzled me before; but I believe it was that non-conductors are also sometimes called electrics."

"Yes, it has been found, that all originally electric substances are also non-conductors. Of electrics and conductors lists have been made, and you may look at them at your leisure. It is enough for our present purpose to tell you that earth and water are conductors, and so are all the metals;—metallic conductors are the best. This brass chain is one; so is that iron rod, and so is this tin tube."

Lucy saw and understood this, and now hoped they might go on to the Leyden jar.

"My dear Lucy," said Sir Rupert, "your brother tells me you are fond of French proverbs: did you ever hear 'Il faut reculer pour mieux sauter?' I must therefore go back, if you please, to the reign of Charles the Second, where I left off, just before Harry persuaded me to show you the experiment of the poker. Many of the members of the Royal Society, which was at that time first established, were at work on electrical experiments. Among others was a philosopher, with whose name you are perhaps acquainted—Boyle."

Lucy asked Harry if this was *his* Boyle, the great vacuum-man?

"Yes," answered Harry.

"He was one of the first persons who had a glimpse of electric light," continued Sir Rupert, "which he first saw from a diamond."

"A diamond, sir!" said Lucy: "I thought you told us it was first seen in amber."

"I said it was seen in amber, but I did not tell you it was first seen in amber," said Sir Rupert; "I should not have mentioned that out of its order in point of time. Boyle is supposed to have been one of the first discoverers of electric light. He noticed it as he was rubbing a diamond in the dark."

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"But was Boyle the *first* person who made this discovery?" said Harry, doubtingly.

"Perhaps," said Sir Rupert, smiling, "you claim the honour of it for the children in the Arabian tale, who wakened their mother by quarrelling for the diamond that gave light in the dark!"

Harry and Lucy both smiled.

"But seriously, sir," said Harry, "did not Otto Guerick see sparks and flashes from his whirling globe of sulphur?"

"Sparks and flashes he certainly saw from his sulphur globe; but whether before Boyle saw the flash from his diamond, is to this hour a disputed point; and I advise our avoiding all disputes."

"I am glad of it," said Lucy, "they hinder one from getting on."

"But," said Harry, "I thought it was but justice to settle this, and to give Boyle the honour of the discovery, if it was really his, especially as I love Otto so much."

"Very right, my honourable friend," said Sir Rupert, "preserve that spirit of justice all your life: but, for the present, consider, that if we were to attempt to settle all the disputes about priority of discoveries in electricity, we might stand here all day, and be found in the dark at last. Now let us go on, and keep safe in the use of the impersonal pronoun *it*. It was discovered. I assure you, Harry, I am willing to give all due honour to your favourite, Otto Guerick, for the ingenuity of his whirling globe of sulphur to excite friction, by means of which he made the great discovery of electric repulsion. But, Harry, it is remarkable that he missed another discovery, which was absolutely under his hand."

"Under his hand! What? How, sir?" cried Harry.

"You recollect, or you forget, perhaps," continued Sir Rupert, "how he made his globe. He melted the sulphur in a hollow globe of glass, and then broke the glass to get out his sulphur ball, little imagining that the glass which he broke, and threw away, was a more highly electric substance, and would have answered his purpose better, than that upon which he was intent."

"That is curious! But he could not tell that beforehand," said Harry.

"No, but he might have tried; he need not have taken it for granted that glass is not electric."

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Harry asked if Sir Isaac Newton, who lived at the same time as Boyle, and was one of the early members of the Royal Society, had made any discovery in electricity?

"Yes," said Sir Rupert, "he made one, and but one discovery of importance. As he was rubbing a glass lens, he observed that it became electric on the side of the glass opposite to that on which it was rubbed. This circumstance I did not mention to you, because I cannot explain its consequence without entering into explanations that would not suit you at present. We will go on where we were. After the flashes of light from the sulphur globe, there was darkness on the subject of electricity for some time. Public curiosity, which had been suddenly excited, as suddenly grew tired, and fell asleep in England, from the reign of Charles the Second till the reign of Queen Anne; when it was first wakened, I think, by Mr. Hawksbee, who set to work by whirling a globe of glass. He also provided himself with a globe of sulphur, and one of sealing-wax, enclosing another of wood, and he had a fourth made of rosin; with all these he tried experiments, the chief result of which was the discovery that, of all known substances, glass is the most electric. This proved of the greatest convenience, as well as importance to science. As glass can be so easily moulded, and blown into different forms, it was best adapted to the use of every experimenter, and from that time became the principal part of every electrical apparatus, in the form of tubes, globes, cylinders, and circular plates.

"Still philosophers were as much puzzled about conductors and non-conductors as you were this morning, Lucy. It was only by experiments that they were enabled to settle which were which; and many were tried at this period by two friends, Mr. Wheeler and Mr. Gray, who, in conjunction with one another, laboured to ascertain how far they could communicate electricity—to what height and to what distance. From balconies they let down long hollow canes, and in great barns they stretched wooden rods and strings of packthread, sometimes supported by others of silk. With considerable difficulty they conveyed electricity, by these lines of communication, about seven hundred feet. But they were, as it seemed, still much in doubt which substances served their purposes, and which

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did not: besides their imperfect knowledge of conductors, another difficulty occurred: they found that the electricity which they communicated to bodies, or which existed in electrics, was dissipated after a short time. It was discovered that these bodies parted with their electricity to other surrounding objects; to the earth and to the air. They perceived that their labour must be vain, if, as fast as they poured the electric fluid into the substances on which they were trying experiments, it was lost before they accomplished their object of conveying it to a distance.

"Some new contrivances were required, to counteract and remedy this inconvenience. They separated, as well as they could, the substances on which they were operating from all others; and hung them from lines of dry cotton and silk, finding that these were not conductors. Some of their experiments were tried upon living creatures. They suspended a child by silken lines, and tried to communicate electricity to him. They electrified him as you were electrified this morning, while standing on the glass-legged stool, and only felt the tingling sensation you described. But the electric *shock* had never yet been felt; and though sparks had been communicated *to* the human body, no one at this time suspected that electricity existed *in* it.

"Public attention in England was fixed upon these experiments by the lectures of one, whose name, Harry, I think you know—a great mechanic—Dr. Desaguliers. But it was in France that electricity now became particularly popular. This was in the reign of Louis the Fifteenth, who was contemporary, you know, with our George the Second. The Abbé Nollet, a very ingenious and celebrated man, began by repeating the English experiments, along with his friend M. du Fay, whose name is less known, I cannot tell why. By using *wet* packthread for their line of communication, they succeeded in conducting electricity along the walks of a garden, above a thousand yards, which was then considered wonderful. At a famous experiment, however, exhibited at Shooter's Hill, it has since been conveyed above four miles. I should not have told you this out of due order, but for the honour of Old England, Harry, I could not resist. I beg the Abbé Nollet's pardon. He succeeded, as I told you, in communicating electricity above a thousand yards, by

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means of a line of *wet* packthread. The general observation had long been made, by Gray and others, that moisture assisted in the communication of electricity. Yet it had never occurred to them that water was a conductor. Now it was ascertained that water is a good conductor.

"The Abbé Nollét and his friend M. du Fay repeated Gray's experiment of suspending living creatures by lines of silk, and setting them on cakes of rosin or stools of glass, as non-conductors, for the purpose of preventing the electricity communicated to them from being carried down to the earth. This was called *insulating* them; placing them, as it were, in an island. M. du Fay had himself suspended in lines of silk, and electrified, and delighted he was; but infinitely more so, when, to his surprise, he saw what no one had ever before seen, a spark of electric fire drawn from the human body. The Abbé Nollet declared he never could forget the astonishment he felt, when first he saw a spark of electric fire come from a human creature.

"This experiment, and others upon electric attraction and repulsion, were immediately repeated before the French Academy of Sciences. Curiosity was raised among all ranks in Paris, and crowds of people flocked to see them exhibited. As it had been discovered that electricity could be conveyed from one person, as well as from one inanimate substance, to another, people stood hand in hand in circles to be electrified, and the novelty and surprise of the effect were entertaining to all."

"Did they feel a shock, such as I had this morning?" asked Lucy.

"No, not a *shock*," said Sir Rupert; "only that slighter sensation, which was attended by the snapping noise that you heard, when the sparks came from your hand to the brass knob, and from the brass knob to your hand. As to the electric shock, that was not learned till the discovery of the Leyden vial. But the Abbé Nollet's experiments were sufficiently wonderful at that time to produce general admiration. Franklin was then, as well as I recollect, at Paris, and saw Nollet's experiments. When he returned to America his powerful mind set to work on the subject, with all the requisites that could *promise*—I might almost say, hu-

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manly speaking, *ensure* success—acute observation, indefatigable patience, and great caution in trying experiments, with the habits of close reasoning and active invention. But I must not let enthusiasm for Franklin draw me out of my course. It is not yet time to follow him to the country of which he is the glory; first, justice calls me to Holland. Now, Lucy, we come to the Leyden jar; but for one moment more let me try your patience. It is very difficult to be patient, I know, when just in sight of your object."

Lucy's eye glanced at the trayful of jars which she saw near the electrical machine before her, but she forbore to ask any question. She stood, an edifying example of patience, and the admiration of Harry.

"I must say a word or two to you, my patient Lucy," continued Sir Rupert, "about this electrical machine. You do not imagine that it came into the world as you now see it, ready armed with conductors, and provided with all that could fit it for the service of electrical philosophers. Far from it: this machine, such as you now see it, is the result of the combined observation, ingenuity, and labour of a succession of philosophers, who have been at work for above one hundred and fifty years trying experiments on electricity: and, in fact, this machine contains the evidence and register of their progress. When the name and the knowledge of electricity were confined to one substance, no apparatus was necessary; the man rubbed his piece of amber with his hand, or on the sleeve of his coat, and his business was done. With this he could see and show all the wonders of which he knew the existence. But when knowledge increased, and when the lists of electric substances and of conductors swelled and lengthened, when experiments were to be tried with globes of glass and conductors of metal, with balls and points, and lines of silk —all these things were by degrees arranged into the form you see. A cylinder of glass is used in this machine, instead of a globe; it is found that this shape is preferable. Lucy, do you now perceive the use of the glass legs to the stool on which we placed you when you were electrified, and when you gave a spark to Harry?"

Lucy said she thought that they were to prevent the electricity from being carried down to the earth, glass being a non-conductor. She supposed that she was put upon

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it for the same reason that the man or boy to be electrified was set upon the cake of rosin.

"You reward me for my pains," said Sir Rupert; "or rather you complete my pleasure in teaching you, Lucy; for you show me that you have been attending, and that you have perfectly understood all that I have been saying."

Harry looked far prouder than if praised himself.

"Now I hope the Leyden jar will not disappoint you, after all," continued Sir Rupert. "It was so called simply because it was invented at Leyden, and by means of a vial or small bottle. Its properties were discovered by a Dutchman of the name of Muschenbroek, about eighty years ago, and in this manner. Having observed, like all those who had tried experiments on the subject, that electrified bodies, when exposed to the atmosphere, soon lose their electricity, and are capable of retaining but a small portion, he determined to try whether he could not prevent this loss, and whether he could accumulate a greater quantity, by *surrounding* the substance to which electricity was to be communicated by some non-conductor, instead of suspending it in the air, as formerly, by silk lines, or supporting it upon rosin or glass. The experiment could be simply tried with water and glass: he chose water, as being a powerful conductor, and glass, as it is the most perfect electric and non-conductor. Electricity was to be communicated from a metal conductor to the water in a glass vial. When the water had received as much electricity as it was supposed that it could contain, the person who had the vial in one hand was going with his other hand to disengage an iron wire, which communicated from the water to the principal conductor. But the moment he touched that wire he was surprised by a sudden shock in his arms and breast—the first ever felt from any electric machine, and of which such exaggerated descriptions were given as I repeated to you this morning."

"But how did it happen?" said Harry; "what was the cause of the shock, sir?"

"That," said Sir Rupert, "I dare not even attempt to explain to you. You must be contented at present with the simple fact. This astonishing experiment gave sudden celebrity and popularity to electricity; accounts of it were written to every country where science could penetrate. All persons were eager to feel the *shock*, notwith-

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standing the terrible account of it. Numbers of people made their livelihood by going about and exhibiting it in every part of Europe. Philosophers all went to work to repeat the experiment, and to try to account for what had happened. Many theories or suppositions were formed, but, as Dr. Priestley says, in his account of it, the circumstances attending it remain in many respects inexplicable, and the experiment is to this day justly viewed with astonishment by the most profound electricians. Since the first discovery of the Leyden vial, its power has been increased by coating it to a certain height with tinfoil, both withinside and without; and it soon became an essential part of an electrical apparatus. An electrical battery, such as you see in the machine before you, or as you, Lucy, call it, a trayful of jars, is formed of several Leyden jars, connected together by conductors, so as to increase prodigiously the power and accumulation of electricity.

"To console you, Harry, for not attempting to explain what I cannot explain, I will describe what I can describe—the electric kite of Franklin. His delight and astonishment were great on hearing of the Leyden jar. He repeated the experiment: his ardour increased in pursuit of electrical discovery, and a most brilliant discovery soon rewarded his genius and perseverance. Some points in which the flash and sound of electricity seemed to resemble thunder and lightning, had early occurred to him, and he now resolved to examine the truth of his conjecture by experiments. But, Harry, it is very important to inform you, that several other people had long before been on the brink of this discovery—had actually touched it, but had let it go. The man who first saw the electric light, a hundred and fifty years before this time, said and wrote, that the crackling noise and flash reminded him of thunder and lightning; but he pursued the idea no further. At a more advanced period of our electrical knowledge, their identity with thunder and lightning was again suggested by others. But Franklin, when once the happy thought occurred to him, pursued it unremittingly; and he has left us what is almost as valuable as his discovery, an account of the reasoning by which his mind arrived at that grand truth. This, Harry, you will be curious to know hereafter."

"I am curious to know it now, sir," cried Harry; "will you tell it me?"

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"No, that is not in my promise," said Sir Rupert; "that would lead me too far away from my present engagement to Lucy. This much to please you I will mention, that Franklin argued thus with himself: if lightning be the same as electricity, it will obey the same laws; it can be managed by the same means. If there be electric fire in a thunder-cloud, it may be attracted and brought down to the earth by some of those substances which are found to conduct it. He therefore made a kite of a silk handkerchief stretched on a light cross of wood, with an iron wire pointing upwards. The string was of twine; to the end of the string he tied a silk riband, and where the silk and twine joined he fastened a key. Lucy, can you tell me why he tied a silk riband below the key? Why did not he hold the kite by the key?"

"Because the key would be a conductor, and bring the lightning down to his hand, but the riband would stop it; because silk, as you told me, is a non-conductor."

"Very true," said Sir Rupert; "but, Harry, why did not he hold the kite by the twine?"

"Because, perhaps, he thought, sir," said Harry, "that if it rained, and if the twine should be wet in a thunder-shower, it would, like the wet packthread used formerly, conduct the lightning down to his hand."

"Just so, Harry; all that he had foreseen happened, and all the precautions he had taken succeeded in preventing danger. His kite went up: as soon as a thunder-cloud came over it, the electrical matter in the cloud was attracted by the iron wire conductor. It rained, the string was wet, the lightning ran along the string to the key, and there was stopped from going on to his hand by the silk riband."

"Oh! I am glad of it!" cried Lucy, "I am glad he succeeded—he deserved success."

"He afterward applied this discovery to a useful purpose. Upon the same principle as that of his electric kite, he attached rods or chains of iron to buildings, and connecting them with the earth, the electric fire of the clouds was safely conducted there, and away from all it could injure. And here, at this excellent application of the discovery, I will leave you, my young friends. I cannot leave you with an impression more favourable to science."

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"But, sir," said Harry, "could not you go on—I do not say now, but another day, could not you go on to the discoveries made since that time, and then to galvanism and magnetism?"

"No, Harry, I cannot—I will not," said Sir Rupert.

"But, Sir Rupert, could not you at least be so good as to explain to Lucy what I now recollect was a thing that puzzled me, the difference between *positive* and *negative* electricity. You never mentioned them; is it not necessary to understand what they mean?"

"Necessary to the knowledge of the science of electricity certainly," said Sir Rupert; "but you know I did not undertake to teach you that."

"No, but I wish you would," said both Harry and Lucy.

"Come with me, and I will show you how impossible it is for me to fulfil your wish."

They followed, and he led them to the library. Their father, who was writing a letter, looked up as they came in, and saw Sir Rupert go to one of the bookcases and take down two volumes, one of them a very thick quarto; these he laid on the library table before Harry and Lucy.

"To give some idea," said he, "of the quantity that has been written, and may be read and learned, upon the subject of electricity, look at these volumes."

Harry's father looked at the titles.

"Oh, Sir Rupert, what have you done?" It is all over with Harry now, thought he, and sighed.

One of these volumes, the largest of them, was the very book which Harry had sat up at night to read. His eyes grew round the moment he espied it again, and pouncing upon it, he neither saw nor heard any thing more; not even his father's sigh.

Poor innocent Sir Rupert, equally unconscious of the delight and of the alarm he had given to father and son, stood considering Lucy, with whom also, as his ill fate would have it, his intended good lesson was not operating as he had designed. He had expected that Lucy would be completely awed by the sight of the bulk of these volumes, and that, by turning over the pages and the titles, he could soon prove to her how vain an attempt it must be for her to master such a voluminous subject. But it chanced that the lesser of the quartoes was left to her; and immediately turning to

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its excellent index she found, "*An Electrical Party of Pleasure*," and a bill of fare that quickened her appetite amazingly, as she read—

"Electrical eel—electrical dinner—dinner of electricians—the turkey to be killed by an electrical shock, roasted by an electrical jack, before a fire kindled by an electric spark; the healths of all the company to be drunk in electrified bumpers, under the discharge of an electrical battery."

"Very good philosophical nonsense, after all," said Sir Rupert, addressing himself to Harry's father, and not clearly understanding the cause of the uneasiness visible in his countenance. "Franklin well knew how to catch and fix the attention of young and old. There is no harm, is there, in her amusing herself with these things? She will soon find what she can understand and what she cannot."

Her father assented; but still the uneasiness in his countenance continuing, Sir Rupert added—

"She is too sensible a girl to pretend to know what she does not know. She will never, I will venture to say, turn out one of those mere index-hunters, whom some witty poet describes as 'catching the eel of science by the tail.' But let young people catch the eel any way they can, so that they do but catch it."

"But we must be sure that they can hold it afterward," said her father.

"True, true; you are right, and I was wrong—misled by my own simile, as reasoners fond of similes usually are," said the candid Sir Rupert.

"Harry!" said his father. Harry started.

"I am sorry to see you at that book again."

"I am sorry that you are sorry, father," said Harry, in some confusion.

"You recollect what happened last year, Harry. You lost a whole month of your life trying to make an electrical machine. I found your head so full of that book that I could get nothing else into it. Like an intellectual glutton, you had devoured till your mind had an indigestion, and absolutely could not stir."

"But I am a year older now, and a year wiser, I hope. You shall see how moderate I will be if you will let me finish the book while I am here. I will read it only one hour before breakfast; and I really think I deserve that, father; because, from the time you stopped me I not

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only put it quite out of my head, but never mentioned it or electricity, even to Lucy, till just now, when she showed me the electrical machine; and then, indeed, it all came out."

"And it was all my fault," said Lucy.

"There is no fault in the case, my dear children," said their father. "Let us consider only what is best for you."

Harry closed his book, and without uttering a word, returned it to Sir Rupert with proud submission and dignified humility.

"I will give you my reasons as well as my advice, Harry," said his father, "for you are a reasonable creature; and, wherever practicable, opinion should be supported by reasons, even from age to youth—even from a father to his son.

"I advise you, my dear son, to defer the pleasure of reading that entertaining book, and to reserve electricity altogether as a study for a later period of your life; because, in the first place, you have not time for it at present. You have many things more necessary to learn, more essential to the progress of your education; in other words, essential to your acquiring that strength of understanding which can alone enable you to advance in knowledge hereafter. Neither boy nor man can embrace all the sciences at once. You are now learning those which are in a state of certainty, as far as human certainty goes; electricity, as a science, is in but an imperfect state. Since that book has been written many discoveries have been made. New and vast views have been opened, of which at this moment none can even guess the termination. Many of the theories adopted as certain when that book was published, are now considered as obsolete, or, what is worse, unfounded."

"I beg your pardon for interrupting you, father," said Harry; "but the facts proved by experiments must remain the same, must not they, as far as they go?"

"True, Harry," replied his father; "as far as they go they remain the same; but the explanations of the phenomena, the reasonings on these experiments, and the conclusions formed from them, have varied in consequence of later information, and will vary from day to day, as fresh experiments and newer discoveries are made; so that supposing, Harry, you gave up every thing else, in order to make yourself master of all the

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knowledge in this thick quarto, and granting that you accomplished this object, in what condition would you be? Not up to the modern state of the science, far from it; on the contrary, not in nearly so good a condition for advancing as you are in at this moment; because you would have much to unlearn, and false notions and favourite prepossessions to lay aside. If you postpone reading this work for some years, the science will probably have taken a more stable form; then go on with electricity if you will. When you are able to distinguish truth from error, you will read this book with infinite advantage, and you will find it not only an excellent history of this particular science, but an admirable view of the progress of the human mind in making discoveries, and an invaluable lesson in the errors as well as the efforts of the human understanding. Have I satisfied you, Harry?"

"Satisfied! Oh, thank you, my dear father," said Harry.

There were certain nephews and nieces of Lady Digby's, whom Sir Rupert had once mentioned, regretting that they could not be at Digby Castle while Harry and Lucy were there. By some new arrangement of journeying, it was, however, discovered to be quite possible that they could now come to spend three whole days. When this was announced, Harry, to say the truth, felt more sorry than glad. He knew that the pleasures of the workshop and of the laboratory must be given up, and that they could not hope to have so much of Sir Rupert's conversation and instruction: besides, Harry was not naturally inclined to like strangers. Nevertheless, when they arrived, he liked them tolerably well, even the first evening. The party consisted of a father and mother, two daughters, and three sons. Of the boys, one was about Harry's age, the others younger. The young ladies were older than Lucy, almost grown up, and quite unaffected, good-humoured, and gay. When they went out to walk all together, they became well acquainted, and soon joined in various amusements. As they were standing on the bowling-green, one of the boys observed that there were bowls in the alcove; his brothers ran for them, and all began to play at bowls.

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Its being rather an oldfashioned game was no objection; but the young ladies found the bowls rather heavy and cumbersome. On hearing this, Lady Digby suddenly recollected a ball of a new sort which she had brought from London, thinking it would be agreeable to some of her young friends. She went for it, and returned, bearing in her hand a ball as large as Lucy's head, and of a beautiful light brown colour. It looked transparent—it felt light as a feather. Sir Rupert bid Harry try if it would bound well. Harry struck it on the ground, and it rebounded high over the heads of the admiring circle, higher, as all declared than ever ball was seen to bound before. All inquired eagerly, "Of what is it made?" All examined it and guessed, but none guessed rightly. Sir Rupert told them that it was made of *caoutchouc*, which is naturally very elastic, but by a new and ingenious mode of preparation, it may be blown out to almost any size.

"This ball, then, is filled with nothing but air, so that it is no wonder that it should be light," said Lucy.

Sir Rupert said that he had seen such balls in a shop the day before he left town. They were then quite new things. While the shopman was showing him how well one of them rebounded, it suddenly disappeared, and for some time could nowhere be found; at last it was discovered in a corner, a shrunk, shrivelled bag. It had struck upon a nail. A young person who was in the shop suggested that a covering of leather might preserve such balls from similar disasters in future. Sir Rupert did not know whether this advice had been followed, but he had little doubt that the ball would become popular. It was much admired by the present company for its elasticity, its beauty, and its safety; for with this they could play even in the house, without danger to windows or to looking-glasses.

They played with their new ball till by chance it fell among the branches of a tree. One of the young Mallorys (Lady Digby's nephews) climbed the tree with great agility to bring it down. Some one said he was as active as a harlequin, and this led another to mention a harlequin entertainment he had lately seen, and from harlequin entertainments they talked of pantomimes, and it was proposed that they should act pantomimes this evening.

Harry and Lucy had never tried, but they were very

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willing to take any part proposed to them. They understood that the thing to be done was to represent by action, without speaking, any well known story, or character, or event in fiction, poetry, or history. After having assisted in some subordinate parts, their companions begged Harry and Lucy to choose some subjects for themselves. They proposed several; but, from want of experience, their choice was seldom happy.

Harry's first thought was William Tell, and the tyrant who ordered him to shoot at an apple, placed on his son's head. Harry was provided with a bow and arrows for William Tell. A tyrant was easily found, but who could stand for the child? Harry stuffed a little coat with straw, and Lucy made it a head, and put a hat on it, and the apple was set on the hat. But Harry could not hit the apple, and the stuffed child tumbled on its nose, and when its hat fell off there was an end of William Tell.

Miss Mallory recommended the favourite stories in English history, of Alfred disguised as a minstrel in the Danish camp, and of Alfred in the old woman's cottage. The new performers had good success. Harry, in the character of Alfred, wasted and burnt the cakes with well-acted carelessness; and Lucy's box on the ear was capital. But these had been acted rather too often at Digby Castle to have the charm of novelty.

Lucy was resolved now to choose quite a new subject, and she thought of one from the new Arabian Tales. "Xailoun, surnamed the *Silly*," who was desired by his wife to change himself, and who never could find out what she meant. But nobody was acquainted with Xailoun or his follies. This was as much too new as the other subjects were too old.

Lucy next proposed, surely an unexceptionable scene, the parting of Hector and Andromache; Harry to be Hector, and Miss Mallory Andromache; "for she acts so well," said Lucy, "and I act so ill; but I think I could be the nurse." So it was arranged. Hector provided himself with a dazzling helm and nodding crest, to scare the young Astyanax; but unluckily, though they had chosen the least of the children from the porter's lodge, the child was too old to cling crying to the nurse's breast; obviously too large for nurse, mother, or father. The young Astyanax, besides, was terribly awkward; he would keep his thumb in his mouth, not-

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withstanding all his nurse could do to hold down his hand. Astyanax began to kick, and pushed his father from him in the midst of Andromache's distress. There was no standing the contrast. Hector and Andromache parted more abruptly than they had intended, and left the nurse to get off Astyanax as she could.

They were more successful in Ulysses and Euryclea. Lucy was admirable as Euryclea, and started finely at the sight of the scar. But this was too short; one start is not enough to make a good pantomime. Harry proposed to lengthen it by placing Penelope at her loom, and shooting the suiters at their riotous feast. A feast is always a good thing for acting, as Frederic Mallory observed; and his eldest sister, who was tall and graceful, would act Penelope beautifully. Her mother's shawl and veil, happily disposed, converted her into the Queen of Ithaca in a trice; and when Harry had taught her to weave and unweave, she bent over her loom with dignity, and pensive sat and mourned, by lamp-light, in the great hall. But a Penelope was nothing without suiters. Vain was the bow of Ulysses, for he had nobody to shoot. Only three suiters could be had, the three young Mallorys, and they were dressing for the Forty Thieves. An experienced manager, however, suggesting that the suiters might be *supposed* to be feasting in the dining-room, he left the door half open between them and the queen. Ulysses looked in, and frowned, and twanged his bow at them through the doorway, with fine tragic effect.

Harry and Lucy found that in the pantomimic art, as in all others, actual experiment is necessary in the selection of subjects, as well as in the mode of execution. One general remark was made, that the Calif Haroun Alraschid, and his Vizier Giafar, were constantly well received. So were Zobeide and her favourite, with the long unpronounceable name, Nouzhatoul Aouadat. There was something in the turban, and in the eastern costume, which was becoming; this prepossessed the spectators favourably at first sight; besides, the effect of the complete disguise upon the actors themselves, gave them courage. The only part in which Harry felt at ease was in Giafar; his black face was as good as a mask, behind which his own was safely concealed. When thus thoroughly incognito, the little actors can forget themselves, and be what they represent.

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It is peculiarly difficult to act any part approaching to our own character, or touching upon our real tastes. Of this truth Lucy was made sensible by a mistake she fell into in the choice of a character for Harry. She persuaded him to act Archimedes. It did not suit him at all. Lucy acted the soldier bravely, with a drawn sword brandished high over his head. But Harry was a very awkward Archimedes at his problem; and this was the more mortifying, because there was not time to prepare another part for him. It was the last night, and too late to act any thing else. It was disagreeable to end with a failure.

Harry and Lucy, however, showed so much good-humour upon this, as well as upon many other occasions during these plays, that though they failed in most of their attempts at acting, they succeeded in making themselves liked by their young companions. The good-nature, and perfect freedom from little jealousies, displayed by the whole party, made them all happy together; and Harry and Lucy agreed, on the morning when their young friends were leaving them, that the visit had been very pleasant, though it had interrupted them in their own little pursuits. Such interruptions are good for us all. They prevent us from becoming selfish; they teach us to turn readily, and in an obliging manner, from one thing to another; and further show us, that there are many ways of employing the time, and of occupying the mind, different from our own, and yet which tend to the same ends—utility and happiness.

The carriage drove from the door; and by the time the sound of the wheels was out of hearing, Harry and Lucy, who were standing in the porch, heard in the hall the short little bark of a dog, and then that sort of noise which is made by a provoked cat, which we would fain call by a more genteel name than *spitting*, if we could find any that would better suit the action. The short bark they knew to be that of Sir Rupert's own little terrier, Dusty-foot; the other sound they suspected to come from the housekeeper's great Persian cat Selima, which was rather a spiteful creature.

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"Oh the ball! the ball, Harry!" cried Lucy.

Harry ran to the rescue. At that instant there was silence. The dog had the great ball between his paws; the cat, with her back up, hair erect, tail stiff, eyes glaring, stood and looked, while Harry, patting the dog's head with one hand, drew away the ball with the other; but with a sudden spring the cat darted forward, and set her paw upon it. Harry, seizing hold of her leg, shook it, and loosened the claw; she gave him one scratch, and seemed to meditate another. Lucy then advanced, unfurled her parasol full in the creature's face, and straight Selima fled to her regions below. No shame for cat to fly before that terror, which has ere now scared the most furious of the tiger race.

"The ball is safe," said Harry, after careful examination: "Selima's vile claws have not gone through. It has had a narrow escape. In future we will put it in a place of safety."

While Harry looked round, to decide where that place of safety should be, Lucy patted Dusty-foot, who stood wagging his tail, apparently much satisfied with himself for having so well defended his master's property: but he suddenly sprung from beneath her hands, and darting to an opening door, ran to meet his master. Sir Rupert had the key of the laboratory in his hand, which he held up to Harry and Lucy, and they followed him with the speed of Dusty-foot.

Harry was going to inquire where they should secure the ball; but Sir Rupert interrupted him by asking,

"What is the matter with that bleeding hand of yours, which is tied up in your handkerchief?"

"Only a scratch, sir," answered Harry, in his cut-the-matter-short tone. Lucy desired no better than to fight the battle o'er again.

"But after all, Harry," said Lucy, "I wish you would let me put some courtplaster on the scratch." She had one precious bit in her pocket-book, which she produced. No, Harry would not hear of it. Courtplaster would never stick upon him, he said.

"A man must never mind a scratch; that I have known ever since I was four years old," said Sir Rupert. "Nevertheless, since I have come to man's estate, I have found that scratches are troublesome when they fester; and if you will take my advice, Harry, accept your sister's offer. You will be able to do nothing

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in the laboratory with your hand muffled up in that fashion."

This was an unanswerable argument, whereupon Harry surrendered his hand; but he persisted in his objections to courtplaster; goldbeater's skin was the only thing which would stick on his wounds. Sir Rupert recollected, that in Edward's press some might be found. Edward's press, as everybody knows, was in the laboratory. Sir Rupert unlocked it, observing, that as, in his son's absence, he was sole guardian and administrator of his effects, he had no scruples in administering this.

Lucy opened her eyes at the sight of a piece of goldbeater's skin a foot wide, and a quarter of a yard long. She cut off the strip she wanted, inquiring at the same time what goldbeater's skin was. Sir Rupert told her that this skin, so called from its being used by goldbeaters, was the inner membrane of one of the intestines of an ox, narrow slips of which are joined, simply by moistening and laying the edges over each other. He added, that the gold was first flattened between steel rollers; then beaten out between leaves of parchment, with broad heavy hammers; and lastly reduced to the proper degree of thinness between pieces of this membrane, by beating them with lighter hammers.

Lucy next asked why Edward had such a store of this among his valuables? Did he cut his fingers so very often as to need such a provision?

Sir Rupert told her that Edward had it for a very different purpose; for mending balloons. At the word *balloon*, delight and eager curiosity glowed in Harry's and in Lucy's face.

"Oh, sir!" cried Harry, "did he ever send up a balloon?"

"Only some very small ones, with which we were trying some experiments."

"Well, even a small one," said Lucy, "I should like to see, for I never saw a balloon in my life."

Sir Rupert went back to Edward's press, and took down from the hook on which it hung a bag or bladder, about the size of a man's head.

Harry observed it was thinner than any bladder he had ever seen. It was a ready-formed globe, in which he could discover no joining. He asked what it was made of. From what he had heard about the caout-

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chouc ball, he began to suspect that this little balloon might be of the same substance.

"Animal or vegetable, sir?" asked he.

"Animal," answered Sir Rupert. He told them it was the craw of a turkey.

Harry began to blow into it to swell it out, that they might see its full extent. Sir Rupert desired him to take care what he was about, and to handle it gently, for it was one of his son's most precious *valuables*. It was the craw of an uncommonly large Norfolk turkey, and had been peculiarly well prepared. Some skill and care was necessary, he observed, in the cleansing and preparation. He knew that his housekeeper had spoiled several before the art had been attained so completely as to render them thus inoffensive to smell, and so light as to be the balloon-maker's joy.

Lucy admired its delicate texture, and *no* weight. Harry observed that there had been several little tiny holes in it, not larger than pinholes, which had been carefully patched.

Yes, as Sir Rupert said, it had been in truth most carefully patched; he had seen his son at it for half a day. Sir Rupert bid them guess how Edward had contrived to detect all these small fractures, which were scarcely discernible before the patches had marked their situation.

Lucy thought that, in the first place, he must have blown air into the craw, so as to swell it out nearly to its utmost extent, and then he might have pressed it to discover where the air came out, and there he must have applied his patches.

"This was the way he first tried," said Sir Rupert, "but his feeling was not acute enough. He was obliged to think of another method. Can you invent what that was?"

Lucy, at this moment, saw a bit of downy feather, which was floating in the air. As Sir Rupert observed her eye caught by it, he said, "That is a good idea, Lucy. Edward held a bit of down, as light as this, to the parts of the balloon where he suspected there were holes; and, as he pressed the balloon, the motion of the light filaments gave him notice of the place from whence the air issued; but this down was not sufficiently sensitive to detect the smallest holes."

"Perhaps," said Harry, "Edward went round it with

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a lighted taper, nolding the flame as near to the surface as he could, without endangering its safety, and at whatever place he perceived that the flame of the candle was blown, he must have been sure that there was a hole."

"You are right, Harry," said Sir Rupert. "This way succeeded very well, and still better when he fixed the light, and turned the globe round, so that he might try each part in succession."

"But why was it necessary to fill up every little hole so excessively carefully?" asked Harry. "My uncle's balloon went up very well without all that care."

Sir Rupert asked of what size it was, and with what it was filled.

"It was about ten feet in diameter," answered Harry. "It was filled with hot air from a fire of lighted straw, over which its mouth was held."

Sir Rupert explained to him that the turkey's craw was to be filled with hydrogen gas, which is much more difficult to confine than the common heated air, that had been used for filling the balloon Harry had seen at his uncle's.

Lucy was very much afraid that Harry would ask some further question before she should have time to make a petition which was on her lips, and which was keeping her breathless with anxiety.

"Well, my dear Lucy," said Sir Rupert, taking compassion upon her, "say whatever you want to say."

"I wish I could see a balloon go up," cried Lucy, and the vehemence of the exclamation expressed the strength of the wish.

"Then you shall, if we can manage to send one up for you," said kind Sir Rupert. "But only this small one, I have no other; will this content you?"

"Oh, yes! thank you, sir," said Lucy. "Any one, for I never saw any."

Sir Rupert asked how it had happened that she had not seen that which Harry saw at his uncle's?

"Because she was not there. It was at the time of her long visit to aunt Pierrepoint," Harry said; "and I hope she will never be away so long again."

Then turning to the balloon, Harry and Lucy's attention anxiously waited for what Sir Rupert should say next. To their great satisfaction, he determined on filling the little balloon that very day; he would imme-

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diately look for the materials for making the hydrogen gas, and explain the process, which was very simple. He said that he knew he might leave them to Harry's care, though it was not to every one of his age that *sulphuric acid* should be trusted.

Harry and Lucy, in the same breath, though in different tones, said, "Thank you! Oh! thank you, sir."

"But, before we go to the sulphuric acid, sir," said Harry, "could you be so kind as to tell us something more about balloons? I mean of their use. I have seen only one, and know very little about them."

"From what you said just now," said Lucy, "I understand that there are different kinds; I should like to know how they differ. But what I particularly wish to hear is, how balloons were invented; if you would be so very good as to begin at the very beginning of their history."

"Then I must go back again to the reign of Charles II., my dear," said Sir Rupert, "and even to an earlier period, about four hundred years before his time, when, as the biographical dictionary-makers would tell you, *flourished* one Roger Bacon—not the great philosopher Bacon—but a monk, a most ingenious man, with whose name, perhaps, Harry is acquainted. He who made that brazen head, which is said to have pronounced the words, 'Time is, Time was, Time will be.' Whether his brazen head ever pronounced these words, or any other, I will not take upon me to decide. You may judge of the probability for yourselves," added he, smiling; "but what is more certain, he made a discovery which was scarcely less extraordinary—gunpowder; and it was he who invented, Lucy, what is more in your way, and will please you better, the camera-obscura. It was this Roger Bacon that first suggested the possibility of a machine, by which a man might mount into the air. But none believed him. Some hundred years, as usual, passed between the first suggestion and accomplishment of a great invention. Nothing more was done or attempted after *Roger the Great's* time, till the days of that constellation of scientific men who shone forth at the first establishment of our Royal Society, in Charles the Second's reign.

"At that period there arose another bold genius, of the name of Wilkins, a daring inventor, who rather imprudently published, before he had actually tried the ex-

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periment, that he should soon be able to fly with wings of his own contrivance. By the aid of these wings he was not only to raise, but sustain himself in the air, and to travel in a flying chariot, which, by mechanical means, he promised himself he could guide at pleasure, and raise or lower by the movement of his wings. He further prophesied, that in future times 'Men would travel through the air as commodiously and as easily as on the water or on the earth; and that the day would come when people would call for their wings, in setting out on a journey, as commonly as men call for their boots.' Those were his words, and they have been too often repeated in scorn of projectors and inventors."

"I am sorry," said Harry, "that he was so imprudent as to boast beforehand, whatever he might hope. Did he try any experiment?"

"He tried, and tried, but—

"'Let him try or wood or wire,
He never got two inches higher.'"

"I am sorry for it," repeated Harry. "I cannot bear when ingenious men do not succeed in their inventions, for then stupid people laugh at them."

"Therefore ingenious men should be prudent, Harry, and not *bolt* out their inventions before they have tried them. The wings did not answer; and as there appeared to be little probability that his audacious prophecy would ever be fulfilled, the world, both learned and unlearned, joined in laughing at Wilkins, and at his wings, and his voyage to the moon. Even philosophers deemed it beyond the powers of mechanism or science for man to mount and sustain his flight in the air; and common people expressed their sense of the impracticability or visionary nature of any scheme, by saying, 'It is as impossible as to fly, or to mount above the clouds.'"

"Yet this was not impossible for science at last!" exclaimed Harry, triumphantly.

"About the same time," continued Sir Rupert, "an ingenious Jesuit, of the name of Lana, laying aside the idea of wings, thought of mounting in the air on thin hollow copper globes, in which he had produced a vacuum."

"A vacuum! very ingenious," cried Harry. "Did he succeed?"

"No, poor man, he failed, with all his ingenuity; he

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did not know how to make his vacuum perfect enough; besides, the weight of his copper balls was too great; and when he made them very thin, the pressure of the atmosphere drove them inwards, and destroyed them."

"Ah! there was no resistance within," said Harry. "Who came next?"

"Another ingenious man, Galien, who wrote a little book, in which he plainly said, that if any lighter kind of air than the common atmosphere could be found, and if a bag were filled with it, people might mount, by means of it, into the air."

"That is exactly the description of a balloon, is it not, sir?" said Harry.

"Yes, but he never discovered this lighter kind of air," said Sir Rupert.

"He only said *if*," said Lucy.

"His principle, however, was quite right, but there it remained; no one applied or pursued it for another century, till at last the simplest observation imaginable led again to the right point. From observing the smoke rising in the air, and clouds floating in the atmosphere, it occurred to Montgolfier—"

"Montgolfier!" exclaimed Lucy; "now I know we are coming to real balloons."

"It occurred to Montgolfier," continued Sir Rupert, "that if he could confine the smoke or the cloud in a bag, it would rise into the air; and that if he could fill the bag with it on earth, he could mount along with it to the skies. Pursuing these ideas, he observed, that air, when heated, is lighter than when not heated, because it is more expanded, more rarefied, and he resolved to try heated air for his balloon."

"Now he has it!" cried Harry.

"Yes," said Sir Rupert, "when filled with heated air up it went. Then his next ambition was to make a balloon that should not only rise itself, but carry him up also. For this purpose it was necessary to ascertain what size would give it sufficient power. When the capacity of a balloon is such, that the difference between the weight of the light heated air that it *contains*, and that of the heavier atmospheric air which it *displaces*, is exactly equal to the united weights of the man, the car, and the balloon, then that balloon will just float in the air. But as we find that the atmosphere is gradual-

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ly thinner and lighter in proportion as we rise above the earth, so it becomes necessary to make the balloon considerably larger, in order to ascend to any great elevation. The difference between these weights is called the *ascensive power;* and you see, Harry," continued Sir Rupert, "how necessary it was for this great inventor to know how to calculate with exactness, or he would never have mounted in triumph into the air as he did."

"He did mount then," cried Lucy. "Oh, yes! I know he did."

"This balloon was filled with air, rarefied or heated by a fire of straw made underneath it," continued Sir Rupert; "and crowds of spectators assembled at Paris to see the first public experiment, which completely succeeded. But I need not describe it, as accounts of it can be read in so many books, in prose and in verse."

"But how did he keep up?" asked Harry, "for when the outside air cooled the heated air inside his balloon, he must have come down."

"Very true, Harry. But then he carried fire up with him, fastened to the bottom of the balloon, to keep the air within constantly rarefied."

"Was not that very dangerous?" said Lucy.

"It was," said Sir Rupert. "Those fire-balloons are very dangerous."

"And besides," said Harry, "how could they carry up weight of fuel enough to supply the fire?"

"Yes, that was another difficulty," said Sir Rupert.

"And how were all these difficulties conquered?" said Harry.

"They are not all conquered yet," answered Sir Rupert. "But some improvements have been made."

"By what means, sir?" said Harry.

"Principally by chymical means. Long before the time of Montgolfier, philosophers had discovered a kind of air, or *gas*, that was much lighter than atmospheric air. It was first called inflammable air, from its property of easily inflaming, but now it is called *hydrogen* gas."

"Then, still, even that was dangerous," said Lucy.

"Yes," said Sir Rupert, "but it only inflames when it comes in contact with flame; if we keep it from this it is safe."

"Well, that was much better," said Lucy, "than carrying up fire flaming under the balloons. Then they filled them with this hydrogen?"

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"Not for some time. First one man said it might be tried, and another man tried it—but only in blowing large soap-bubbles. At last three ingenious chymists employed this gas in filling a large balloon, which was made of silk, and well varnished, to keep it from escaping."

"And I hope that kept it in tight," said Lucy, "for then the man might stay up in the air as long as he pleased."

"It kept it in too well," said Sir Rupert; "as it rose very high, the outward pressure of the atmosphere became so much less, that the gas expanded with great force, and having no way to escape, the silk burst, and down fell the balloon."

"And the poor men!" said Lucy, "what became of them?"

"They did not go up in it," said Sir Rupert; "but the experiment succeeded so well, that the inventors resolved to try it again, and this time to go up themselves; for now, having considered what caused the accident, they thought that they had found out a way of preventing it from happening again."

Sir Rupert paused, to give Harry time to think what way.

Harry said to himself, the balloon burst because the gas could not get out when it expanded. "Perhaps, sir," said he, "they put a valve to their balloon, something like the safety-valve of a steam-engine, so that they could let some of it out when they liked."

"Just so," said Sir Rupert.

"This succeeded, then," said Lucy. "How far did they go?"

"About a league, as well as I remember," said Sir Rupert.

"Only a league! three miles," said Lucy. "I thought people had gone much farther in balloons."

"Much farther some time afterward," said Sir Rupert. "One man crossed the sea from England to France, and another went three hundred miles in a few hours—seven, I think."

"Three hundred miles in seven hours! That is real flying!" said Lucy.

"I wish I had been with him," said Harry.

"He was in great danger," said Sir Rupert. "He went up at night; his balloon was filled with this in-

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flammable gas, and illuminated by several lamps hung round it."

"How beautiful it must have been," cried Lucy.

"But very dangerous," said Harry; "for how could he let out the gas when it was necessary—the lamps would have set it on fire."

"He was not quite so imprudent as you think," said Sir Rupert: "he had provided a contrivance for keeping the hydrogen safe from the lamps, as well as to permit his letting it out occasionally during his voyage; but it happened, that at the time his balloon was filling, the mob of Paris crowded round it, and they were so impatient that they would have torn it to pieces if he had delayed; they would not even give him time to adjust his apparatus to the safety-valve. He rose with unexampled rapidity high above the clouds; the balloon suddenly expanded; he saw the danger, but from fear of the lamps he dared not let out the hydrogen. It swelled more; he saw it must burst in another minute. What did he do, Harry?"

"He put out the lamps," answered Harry.

"Yes," said Sir Rupert; "with one hand he stretched to the lamps, and extinguished as many as he could reach, while with the other he tore a rent in the balloon, to let out the gas. The inflammable air was discharged in great quantities, and thus his presence of mind saved him."

"Great presence of mind, indeed," said Lucy. "I wonder how people can think at all, up in clouds at that terrible height, and no possible assistance near them."

She wished to hear more entertaining adventures of people who had gone upon voyages of discovery in balloons.

Sir Rupert told her that he would put into her hands a book, in which she might read all the adventures of these aeronauts, or aerial voyagers; related, as he said, in a much more amusing manner than he could tell them. "I will look for the book for you in the library, and you may read it before you see our balloon go up, or afterward, whichever you please."

"Before, if you please, sir; I should like it now," answered Lucy. "It is so pleasant to read about things at the very time when we are thinking of them. Harry, will you come and read it with me?"

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"No, thank you," said Harry; "if one of us read it, that will do; you will tell it to me afterward, and I want to see how this balloon is to be filled."

"I should like to see that too," said Lucy.

Sir Rupert began the operation. He put some filings of iron into a bottle, and upon these he poured sulphuric acid, diluted with about six times the quantity of water.

Lucy, as soon as she saw the sulphuric acid, kept at a safe distance. She did wisely. When the acid was poured upon the iron filings, a cloud of white vapour rose, and she perceived a peculiar smell. Sir Rupert told her that the gas, which was then rising, was hydrogen, and with this the little balloon was to be filled.

Sir Rupert then took a bent glass tube, which was open at both ends; one end he placed in the neck of the bottle, and the other in a jug almost full of water, so that the gas, after passing through this tube, was made to rise through the water in the jug, in order to purify it; over the jug he put a glass funnel, with its broad mouth downwards, to collect the little bubbles of gas which rose to the surface of the water. Sir Rupert, having placed this apparatus on the floor, took the little balloon, and suspended it from a walking-stick, which he laid on the backs of a couple of chairs; the aperture in the bottom was tied fast round a piece of quill, about an inch of which was left projecting beyond the place where it was tied; this he put into the small end of the funnel, and plastered round their joining with a *lute*, made of that which was ready at hand, some almond paste and water, and he also luted the glass tube into the neck of the bottle. The joinings being now air-tight, none of the gas could escape except through the quill, which left an open passage for it into the balloon.

Presently Lucy saw the bubbles rising more and more thickly, and as the gas ascended through the funnel, she observed that it began to inflate the balloon. As the affair, however, seemed to proceed but slowly, she thought it would be tiresome to stay till it was finished, especially as she could be of no use; she said, therefore, that she was satisfied, and went to the library to read the adventures of the other aeronautic voyagers.

Sir Rupert accompanied her; and having kindly marked several entertaining passages, he returned to Harry, who, as he said, would want his assistance.

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Lucy had time to read all that Sir Rupert had marked in the history of aërial voyages, before the little balloon was filled. She found Harry alone in the laboratory when she returned, holding the balloon, which was now a perfect globe, quite inflated. He showed her that the quill was stopped at the bottom by a little plug of cork, which Sir Rupert had stuck in when the balloon was sufficiently expanded, so that he might clean off the luting without fear of losing any of the gas.

"I am glad Sir Rupert stayed to do all this for me," said Harry, "and that I have seen how quick and dexterous it is necessary to be with it. You are come just at the right time, Lucy," added he; "we had but just finished."

"Let go the string, Harry, by which you are holding the balloon," said Lucy, "that I may see if it will go up."

"Go up! to be sure it will," said Harry. "Look how it pulls against my hand. I am fastening this little weight to the bottom of it; I think it will carry this up also."

"That little weight!" said Lucy; "is that all it is able to carry!"

"All; and a great deal it is," said Harry, "for such a small balloon."

"It may be a good weight for it to carry in proportion to its size, to be sure," said Lucy. "Now, Harry, pray loosen the string. There—there—up it mounts."

"But I do not wish it to mount too high, or to strike itself against the ceiling," cried Harry. "I must add more weight."

He added a little more weight, and tried it again; and, at length, to satisfy Lucy, he let go the string. It seemed to be nicely balanced above their heads, half-way between the floor and ceiling. After remaining still a few moments, it moved towards the fireplace; as if, as Lucy said, it wanted to warm itself; and when it had remained there till it was warm enough, went away again. The fact was, as Harry observed, that the draught, or current of air, wafted it towards the fireplace; as it approached, the fire heated the gas within, so that the balloon rose higher towards the ceiling, and floated about, till the gas cooling, it descended, and, again wafted by the draught, the same movements were re-

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peated. Harry observed them with untired interest, calling out, "Now it rises, *because*—and now it falls, *because*," &c.

But after a minute or two Lucy said, "It is very curious; but when will you let it up out of doors, Harry? I want to see it go up to the clouds."

"As soon as my father and Sir Rupert come back," said Harry.

"In the meantime," said Lucy, "I will tell you what I have been reading. Sir Rupert might well say it was entertaining; but I cannot tell it to you if you are so entirely intent upon that balloon."

"But, my dear, I am not entirely intent upon it; I can hear you very well."

"Ah! you can hear, I know; but you will not listen to me comfortably while you are watching that balloon."

"Then," said Harry, laughing, "you must watch the balloon, and I will listen to you while I am sharpening my knife; and yours too, if you will give it to me. May I do that?"

"Oh! yes; thank you," said Lucy; "I know you can listen while you do that. My dear Harry, do you know any thing about *parachutes*?"

"No," answered Harry, "nothing."

"I am glad of it," said Lucy, "for I can tell you something at least about *them:* parachutes are used to prevent the danger in falling from balloons. The name parachute, from the French word *chute*, shows its use; it is a sort of umbrella, which spreads out of itself the moment it feels the resistance of the air, and that prevents it from coming too suddenly down. A man tried it first with his dog; he fastened him to a small parachute, and when the balloon was at a great height, he dropped him out; the parachute spread, and—"

"Very well," said Harry, "I see. The parachute must have been of use in preventing his descending too quickly."

"So I thought, my dear Harry; and so it would have been, but for the wind. The wind blew, and blew till it was a great storm, quite a whirlwind; the poor dog and parachute were blown up and down, and all manner of ways, and at the same time the man in his balloon was equally tossed about, without power to stop, or to guide himself; at last, when the storm began to cease, man

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and dog came in sight of each other again, and the dog, knowing his master, began to bark, just as he would have done upon earth: once they came so close together, that the master stretched out his hand to take him into the balloon, but another provoking gust of wind whirled him away; however, at last, the man and the dog came to the ground—man first, dog next, with his parachute, quite safely!"

"Then it succeeded, you see!" said Harry.

"Yes, this time," said Lucy; "but another time a poor man broke his leg by coming down with a parachute; and you must know, Harry—I am sorry to tell it you—but I must, for it is the truth—a great many dreadful accidents have happened to people with these balloons; one man was burnt to death, and several were near being drowned, by dropping into the sea; they must have been drowned, but for some good-natured fishermen who saved them. Another balloon-man was in a terrible condition; a thunder-storm came on, and he in the midst of it, up in the clouds: he says that at one time he was in a state of insensibility, lying at the bottom of the car—he does not know how long—then bounce came the balloon against the earth; and when it rebounded, he was dashed against a rock. Oh! my dear Harry!—at last his anchor hooked in a tree, and this saved him. Philosophers may say what they please, but indeed I think it is very bad work, Harry; I should not at all like to go up in a balloon."

"I am glad that you would not," said Harry, "for I do not think it would be fit for you."

"But what is more, Harry, I should not like that *you* should go up in a balloon," said Lucy.

"That is another affair," said Harry. "It is a man's business to brave danger."

"In a good cause," said Lucy.

"In a good and great cause, to be sure," repeated Harry.

"But then it comes to this—what is a great cause?" said Lucy.

"Is not the cause of science, my dear, a great cause?"

"I do not know," said Lucy. "I think it is quite enough if a man hazards his life for his country—for his father and mother, and friends, or for poor women, sisters, and so forth. You may ask my father as soon as he comes down stairs."

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"Not now," said Harry, "we will talk of it another time, you know we are going to the balloon. But, Lucy, where is the balloon? Oh! Lucy, what is become of it? I told you to watch it."

"I do not know," cried Lucy, "what has become of it: it must be somewhere in the room, but I cannot see it. Look up on that high press—I will look under the tables."

High and low, and everywhere they looked, but without seeing it.

"The windows are shut—the door is shut—nobody has come in—nobody has gone out of the room since we had it safe," said Harry.

"It must have burst," said Lucy. "Look for the skin."

"It could not have burst without some little noise, I think," said Harry.

"We will settle about the noise after we have found the skin," said Lucy: "but I cannot see any thing like it. What can have become of it?"

Harry made another careful search in silence, and then said, "I am now sure that it is not in the room, and it could not have got out of the room any way but one."

"What way?" asked Lucy.

"Up the chimney," said Harry.

"Up the chimney!" said Lucy. "But now I recollect, it is very likely—you know how fond it was of going towards the fire."

"It may have stuck in its way up," said Harry, trying to look up the chimney, but nothing was to be seen.

"Nothing but darkness," said Lucy, popping up her head as Harry withdrew his. Harry ran out directly to try if the balloon could be seen hovering over the house. Where it had flown none could tell. One man had seen "something very odd" come out of the top of the chimney; another had seen this odd something pass over his head—he had thought it was a kite—he could tell only what he had thought it was, and how much he was surprised when he saw that it was not what he had thought; but more he could not tell.

Harry ran from field to field, jumped over ditches and jumped back again; and, breathless, hot, and tired, came home no wiser than he had gone out. Lucy all the time was exceedingly sorry for her carelessness, for which Harry never once reproached her.

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They were particularly vexed by the loss of this little balloon, because it belonged to Edward Digby, who had, as Sir Rupert had told them, spent nearly a whole day in patching it. The more they thought of it, the more they grieved. Sir Rupert did all he could to comfort them, by saying, that he would take it upon himself to provide for Edward as good and great a Norfolk turkey's craw as that which was lost. "But," added their kind comforter, "I by no means give it up yet as lost, only strayed—certainly not stolen; our neighbours and our neighbours' children are all honest and kind people. Some one will probably find our little balloon, and bring back its skin to-morrow. But now for to-day. I am sorry you are disappointed: I wish I had for you a beautiful little balloon I once possessed—my flying-fish."

"A flying-fish! I wish we had it," said Lucy.

Harry asked what size it was.

"About four feet from head to tail, and broad in just proportion for a fish," said Sir Rupert, "with proper fins, and every thing that could make it look like a real live fish. It was made of baudruche."

Harry asked, "What is *baudruche*?"

"Simply goldbeater's skin. Baudruche is the French name for it; and my thoughts going back to Paris, where I had first seen such a balloon, I used the name by which I had there heard it called. I gave my pretty fish to Edward, who was very young at that time. It was lost in coming over: it fell, I believe, into the sea."

"Very natural," said Lucy, "for the fish to go into the sea."

"But since we have not that, or any other," pursued Sir Rupert, "what can be done now? Since we have none ready made, what would you think of trying to make one for yourselves?"

"I think it would be the happiest thing in the world," said Lucy.

"If we could do it," said Harry.

"Why not?" said Lucy, "if we had any thing to make it of."

Sir Rupert thought that Lady Digby, who it seems had every thing that everybody wanted, could perhaps furnish a quire or two of silver paper.

"Then we can soon make a balloon of silver paper, I am sure," said Lucy.

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"We have only three days more to stay at Digby Castle," said Harry, sighing profoundly.

"Only three days, indeed!" said Lucy, echoing the sigh sincerely; but in a more sprightly tone she added, "Three whole days; and this, remember, is not half gone, Harry. But I wonder you are not more eager even than I am about our balloon."

"My dear, I am eager about it," said Harry, "very eager, but I see many difficulties; and I am afraid we should only waste Lady Digby's silver paper, which I know is valuable to ladies for their cap-boxes."

"I would not have you waste that, my dears, or any thing else," said Sir Rupert, smiling; "but I can answer for it that Lady Digby, for such a purpose, will give her silver paper willingly, even out of her cap-box, if it were necessary. However, not to raise the merit of her sacrifice, Harry, I can tell you that she happens to have a store of it, which she bought for Edward. There is much to be learned in doing any thing of this sort well; and so much ingenuity must be employed, that I am always a promoter of such things. I am always for letting my young friends try their own experiments."

"But do you really think, sir," said Harry, "that we can succeed?"

"Tell me how you would set about it, and then I will give you my best opinion," said Sir Rupert.

"I do not know," said Harry: "I only know that it is exceedingly difficult; for I recollect that when my uncle's balloon was making, he and my father were calculating and measuring, with long tables of figures, and scales, and beam-compasses—but I could not understand what they were doing."

"But that was a year ago, Harry, you know," said Lucy.

Sir Rupert took them to the library, and showed them, in one of the plates of the Edinburgh Encyclopedia, the *gore* of a balloon, with all the requisite dimensions marked on it.

Lucy was awestruck at the sight of a diagram, with curves, and crossing-lines, and, as she said, "with decimals innumerable." But Harry's hopes began to revive. "You once," said he, "covered a ball for me, Lucy, and its cover was divided into gores, which were very like this; they were all of different colours, I recollect, and very pretty."

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"There was no great difficulty in that," said Lucy; "the ball was very small, you know, and ready shaped for me. I measured it round, and divided it into an equal number of parts, and counted how many gores of such a breadth, in their broadest part, would go round it; and then I cut a pattern in paper, sloping it, and guessing by my eye, and trying repeatedly what would fit: then I cut all the leather gores by my paper pattern, stuck them round the ball with pins, and by measuring and cutting, pulling and pushing, and puckering, stretching, and coaxing, the ball was at last finished."

Lucy showed the manner in which she had creased her paper in various directions, in order to make her pattern, but Harry thought it exceedingly difficult and incomprehensible. Sir Rupert, to whom the case was referred, thought that Lucy's method might do, if she took care to allow sufficient margin for joinings, and to admit of letting out or drawing the pieces closer together, as occasion might require, to compensate for inaccuracies.

The chief difficulty now seemed to be the shape of the pattern gore; but Lucy's alarm at the "innumerable decimals" not having yet subsided, and Harry still fearing that a large part of the "three days" would be consumed in making himself sufficiently master of the subject to construct it with mathematical accuracy, Sir Rupert compounded with them for a method, which, he said, would answer well enough for a first attempt.

"Let us determine," said he, "what is to be the shape and size of your balloon. Suppose it to be a globe of eighteen feet in circumference—in that case, twelve gores will probably be enough; and the greatest breadth of each of these must evidently be eighteen inches, or a little more, to allow for a pasting margin. It is equally clear that their length must be half the circumference of the globe, or nine feet. To make your pattern, I would advise you to paste some sheets of brown paper together, so as to form a narrow parallelogram of nine feet long and eighteen inches wide. This, you know, must be tapered to a point at each end; not by straight lines, but, as you observed, Harry, by curving the sides; and as you are doubtful of accomplishing this with geometrical precision, I think we may trust to your eye to draw the curves, provided you make the greatest quantity, that they bulge out from a straight edge, about a

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tenth of the extreme breadth of the gore; that is, in this case, about one inch and three quarters."

Harry and Lucy were eager to begin on the strength of these directions. "But now," thought Harry, "what sort of a balloon shall it be?" He asked Sir Rupert if he had ever seen a balloon which carried up fire with it to keep the air within rarefied?

Sir Rupert said that he had seen several: one in particular he well recollected; "Its paper cover," said he, "caught fire when at a considerable height in the air; it seemed a globe of flame, and for a second or two that it retained its form, it made a most beautiful spectacle. But, Harry," said Sir Rupert, suddenly checking himself, "are you thinking of sending up fire with your balloon?"

"Oh yes—why not, sir?" cried Lucy, "I should like very much to see it take fire in the air."

But Sir Rupert said he could not consent to this—he thought it too dangerous. "There are several thatched houses, and ricks of corn and hay, in this neighbourhood," said he, "and if the balloon fell upon them, it would set them on fire."

The moment that this danger was pointed out, Harry abandoned all further idea of a fire-balloon, and asked whether he might fill it with hot air?

Sir Rupert willingly consented to this, and told him that they should have a chafing-dish, with burning charcoal, by which the balloon might be filled, with less danger of setting it on fire than if they lighted a fire of straw under it. Sir Rupert added, that though the sending up fire with a balloon from his park would be hazardous, yet there were other situations in which it might be done without danger; for instance, when they returned to the seashore, they might, if their father approved, try one when the wind blew towards the sea. Sir Rupert sat down immediately, and wrote for them the following directions, which were committed to Lucy's memorandum-book for a future occasion.

"Choose a calm dry evening; and having erected in the ground two poles, at a sufficient distance apart to prevent the balloon, when inflated, from touching against them, pass a string through the ring at the crown of the balloon, and fasten the ends of it to the tops of the poles; then, in order to inflate it, place a chafing-dish with burning charcoal under the opening at the bottom; it will presently swell out, and consequently rise to a greater distance from the chafing-dish, which will enable you to hook on a small wire basket, contain-

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ing a sponge soaked in spirits of wine; this basket will also help to balance the balloon when in the air. The string on which the balloon is suspended must be cut at the moment that the spirits of wine in the sponge is lighted."

There is no ancient saying of which the wisdom is more cordially felt by youth, than that "they who give quickly give twice." Lady Digby immediately ordered for them a large deal table, placed in one of the spacious unoccupied bedchambers, where, the carpet being rolled up, they might use floor or table, as they liked: she also provided them with a dish of good paste, two paste-brushes, two towels, the housekeeper's large cutting-out scissors, a pair of compasses, a long ruler, and, in short, all they could want, including what only her kindness could have suggested, two pair of steady, able-bodied clothes-horses from the laundry, on which to hang their long sheets of pasted paper to dry. They set to work. Lucy's first business was to paste the sheets of silver paper into the narrow parallelograms, while Harry was intent on his brown paper pattern.

Harry's pattern ready, Lucy cut out all the twelve gores in the silver paper, leaving "ample room and verge enough" in the margin to compensate, if necessary, for inaccuracies. Then came the *magnum opus* of putting together the gores. They proceeded not without many little disasters, too tedious to relate. Lucy handled her brush in a masterly style, lightly and evenly—ever keeping strictly within her bounds, she swept along with steady and determined hand to the end of her course; at last each pair of gores was pasted together, and each having been allowed time to dry, the patience necessary for which being the greatest trial of all—the whole was, with a little coaxing and a little puckering, joined together. It was necessary that the balloon should open wide, so that it might be held over the fire to be filled with hot air, therefore the lower points of the gores were cut off, and the bottom was pasted round a light hoop of cane. When they thought the balloon was finished, Lucy put her delighted head within it, to contemplate the inside; but to her great dismay she saw various little holes in the paper, and the remainder of the day was spent in putting patches over each detected flaw.

On the morning of their last day, the weary business of patching was ended. Each hole had its patch, and

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every patch was dry, and never did artists contemplate their work with more satisfaction: Lucy, with a few exclamations of delight; Harry, with sober, silent admiration. They stood before their balloon, and wondered that it had ever come together; and father and mother, and Lady Digby and Sir Rupert, successively joined in the same surprise and admiration, with sincere congratulations. In the moment of success, the general gave due credit to his lieutenant Lucy, without whose assistance, as he was proud to acknowledge, all his generalship would have been of no avail. He handsomely acknowledged the skill with which all had been performed that was left to her discretion; though, perhaps, he still more admired that which those in command often prefer to ability—prompt and mute obedience.

It was a fine evening—the sun just setting—out they bore their balloon to an open space in the park; it was suspended from the top of the poles which had been prepared, and the burning charcoal was placed under the opening at the bottom, to inflate it. In a few minutes the flaccid bag began to swell out, fold after fold. The last gleam of sunset, however, disappeared, before it had completely expanded. It now pulled slightly against the hands of the holders-down: they had orders not to let it go till the word of command should be given. Lucy, who was one of the holders-down, felt that it was hot service; but Harry was beside her, and, emulous of his fortitude, she stood firmly till she heard "let go." Up rose the balloon—steady, and majestically high, yet full in view; and paused a while, hanging in mid-air, like a silver moon from the blue sky. The balloon again wafted upwards, and again stood still. There was now seen a beautiful light on one of its sides; Lucy thought it could not come from the sun, because it had disappeared beneath the horizon. It had set for them; but, as her father told her, those who have gone up in balloons have sometimes seen the sun set twice; once while on the earth, and once when raised above it. This appearance lasted but for a moment or two: a fresh breeze arose—the balloon sailed rapidly along; they eagerly followed it with their eyes, but it did not sail steadily far; it wavered, and turned sidewise, and fell—fell—fell on a thorn-bush, never more to rise.

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"It is all over," said Lucy. "But was it not beautiful, Harry? Have we not had a great deal of pleasure, Harry!"

Harry walked on in silence, bearing the mangled remains of the balloon.

"After all," continued Lucy, "when a balloon does not carry any thing up with it, I do not see that it is much better than a kite."

This insulting remark roused Harry from his silence. But when he had said all he could about the ingenuity and curiosity of the invention, Lucy still pressed him to tell what use had been made of it; and Harry, embarrassed, looked to his father and Sir Rupert for assistance, and whatever they could they supplied.

Once a balloon had been used for *reconnoitring*, that is, for discovering the situation, forces, and movements of a hostile army. Balloons have also been employed in trying some magnetical and electrical experiments. One ingenious man employed a balloon on purpose to try a philosophical experiment on sound; he sent up explosive materials for this purpose, to be let off at different heights, but the shouts of the crowd below prevented these from being heard.

"And nothing more found out yet! No more use made of balloons!" said Lucy. "Oh! Harry, what have you to say now!"

"That they have gone fast out of favour with you ever since you read and thought about the danger," said Harry. "However, I must acknowledge it is surprising that such a great invention has not yet been of more use."

Sir Rupert observed, that one reason for this had been that it was so expensive to make balloons, that poor philosophers could not afford it: the expense, however, has now been somewhat diminished by the use of coal-gas in the place of hydrogen. Balloons, he said, were generally sent up merely as shows, and paid for by people who went to see them merely for amusement; the exhibiters, therefore, thought only of producing a grand effect; for instance, they made one to represent Meg Merrilies, another was a figure clothed in a flame-coloured robe, and another was a Pegasus transporting a richly-accoutred warrior through the clouds.

"Oh!" said Lucy, "I wish they could manage the balloon Pegasus as the man in the Arabian Tales man-

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aged his flying-horse; by turning one peg he went up, and by turning another he came down."

"That may be done yet, perhaps," said Harry, "by turning one peg to let the air out, and another to let it in. If we could but guide balloons, then, indeed, they would be useful."

"And not till then," said his father.

"But do you think, father, do you think, Sir Rupert," said Lucy, "that the way of guiding them will ever be found out?"

Harry looked eagerly from one to the other, in hopes of a favourable answer.

They would not say it was impossible; they would not say they thought it probable.

"There was a time when it was thought impossible to do what is now done," said Harry; "who knows but the means of guiding balloons are close to us, and under our eyes and hands, just as the rarefied air for raising them was ready long before men invented how to use it."

"True and sensible," said Sir Rupert.

Encouraged by this acknowledgment, Harry inquired what attempts had ever been made to guide balloons. He exclaimed, "What a glorious thing it would be! What signifies the danger—men must die some way or other."

"Well done! well done, Harry!" said Sir Rupert, smiling; "I believe you have hopes of being a balloon-guider yourself."

Harry blushed, and was silent. After a pause he said, in a low voice, to his father, "I may, at least, think on the subject, father."

"There is no reason why you should not think of it, if you like it, Harry," said his father; "but many great men have thought of it, and failed: there is, however, nothing to be ashamed of in this wish; it springs from a praiseworthy ambition."

"And let his ambition take its flight," added Sir Rupert. "Recollect our own schemes when we were boys; our grand magnet scheme, and our efforts to invent perpetual motion. The worst that can be said is, that, though it does us no harm, it does nobody else any good."

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It may be a satisfaction to some kind young heart, or to some equally kind old heart, to be assured, that Sir Rupert was not mistaken in his good opinion of his neighbours and his neighbours' children. The little balloon was brought back by one of Farmer Dobson's young folks; but though Farmer Dobson himself accompanied his boy to bring back this *stray*, or *waif*, as he called it, to the lord of the manor, yet it was now little likely to be of any further use, and no longer worthy to be placed among Edward's valuables; for it had first stuck upon the branch of a tree that overhung Higglesham Ford, then it had fallen into the ford, and just at the worst place it could have fallen—where the cattle came to drink: some beast had set his foot upon it, and the great half-moon rents even Lucy could not hope to repair.

It was all over with it as a balloon, but still its remains were treated with respect, and deposited in a drawer with remnants of other turkey-craws. They might be of service still to balloons yet unborn, which could only be mended by patches of the same stuff.

"But I do not know whether my son will care about balloons so much," said Sir Rupert, "now that his object has been accomplished by other means."

"What was his object?" asked Harry, eagerly.

Sir Rupert told him that the seacoast in that neighbourhood was dangerous—vessels had been driven on shore, and had been wrecked—property and lives had been lost—and Edward's imagination had been struck with the thoughts of contriving means of affording assistance to these poor shipwrecked people. He knew that it was often of the utmost consequence to be able to carry out a rope from a vessel in distress to the shore; and he had at one time an idea that small balloons might, when the wind served, be used for this purpose; but the object had been lately accomplished in an ingenious manner, by simpler means. A method had been invented of sending a rope from a vessel to the shore by means of a kite, which could be made to descend at any place or time required. "By-the-by, Harry," said Sir Rupert, "you cannot do better than read the account of this invention; I am sorry we did not think of it sooner, that we might have tried it; but you shall have the book, and take it home with you. I dare say you will be able to make a kite of this sort for yourself.

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It is a new and perfectly safe invention for you to try—no gas necessary—no fire—nothing dangerous—and something really within your power and present means to accomplish for a useful purpose."

Harry's mind seized the idea instantly with enthusiasm.

"Yes," added Sir Rupert, "even the electric kite, which drew down lightning from the clouds, and which led to the use of conductors, to save us from the danger of thunder-storms, could not be more useful than such a kite as this, which might save the lives of thousands."

Sir Rupert went with Harry immediately to the library to look for this book, and some others which he and Lucy wished to borrow. They were welcome to any, upon condition that they wrote down their names in what was called the *Book-book*, a small volume which lay with the catalogue upon the library table, and in which a debtor and creditor account was regularly kept of all that were borrowed and returned.

Besides the forty-first volume of the Transactions of the Society for the Encouragement of Arts, in which there was the description of the kite, Harry wrote down, "Priestley's History of Vision, 2 vols.," in which he particularly wanted to read about the camera-obscura. Lucy wished to have that book of Franklin's, which she had been looking at the day they were at the electrical machine, for the sake of some letters which she had seen at the end of the volume. Harry found the volume again readily for Lucy. What she alluded to were entitled Letters to a Young Lady on Philosophical Subjects, in one of which the author says to her, "Your observation on what you have lately read concerning insects is very just and solid. Superficial minds are apt to despise those who make that part of the world their study, as mere trifers; but certainly the world has been very much obliged to them."

Lucy wished also for a little volume which she had seen in Lady Digby's bookcase, called Nourjahad, the beginning of which had excited her curiosity. Lady Digby consented, though it was a very favourite book, as it had been given to her by her father when she was about Lucy's age. She also lent her two very interesting accounts of shipwrecks; "The Loss of the Winterton," and the "Voyage of the Alceste."

Sir Rupert's last kindness to Harry and Lucy was the

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lending and explaining to them the use of a *pentagraph*, an instrument for reducing maps or drawings. Dr. Wollaston's *Camera Lucida* he promised to show Harry the next time he came to see him.

Harry was very happy to hear those words, *the next time*.

Sir Rupert expressed his desire to see him and Lucy again whenever their father and mother would bring them; and it was settled that they should spend another fortnight at Digby Castle, making it their way home.

As Lucy was listening most attentively to this interesting arrangement, she was startled by the sound of a carriage: she looked out of the window, and saw that it was their own, driving to the door.

"Is it possible!" cried she. "I thought it was much earlier. Oh! there is mamma with her bonnet on! I did not think it was near bonnet-time yet."

But alas! it was come to that time, and to that last moment when she must say *good-by*.

How often they said good-by it would be impossible to recount. We are sure of once in the drawing-room —once on the steps of the house—once on the steps of the carriage—and again at the carriage window, and a good-by as they passed the porter's lodge, to the mother of Astyanax.

But the present moment, as usual, pressed its claims to attention, and had its claims allowed. Harry began to settle the books in the carriage. Of their inconvenient arrangement, in the moment of farewell, none of the party had been fully sensible. But now it hurt Harry's mechanical feelings to see parcels sliding and slipping, unable to stay in the places assigned them, as these were in direct opposition to the laws of gravity. He set about to alter their arrangement, promising to make it infinitely more convenient to everybody. How inconvenient his elbows were to his mother during this operation need not be represented; it will readily be conceived by all who have ever been in a carriage with a *settler*.

Scarcely had Harry packed the books, and Lucy placed the great nosegay to her satisfaction in one of the pockets of the carriage, than they began a comparison of their feelings during their visit at Digby Castle.

"I have been very, *very* happy!" said Lucy. "Harry,

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let me tell you all the things which I liked, and then you may tell me what you liked best."

What he or what Lucy liked best it was difficult to decide: Lucy seemed to think that "all was best."—"I hope," she added, "that Lady Digby's nephews and nieces may be there at our next visit; how happily we shall play at hide and seek in the *annulled* apartments! I know a place where you would not find me for a year if I did not tell you—up through the trapdoor, near the little staircase leading to that observatory which you have not seen."

"I am to see the observatory, and Saturn and his ring, next time," said Harry, "if next time ever comes."

"If! to be sure it will," said Lucy. "We have not seen half the park yet—we shall have delightful walks with Lady Digby—she likes long, rambling, scrambling walks. Harry, is not she a *nice* woman?"

"No," said Harry. "I like her because she is not *nice*."

"Not in the bad sense you mean; not *over nice*," said Lucy.

"Yes," said Harry; "I mean, that she is not one of those who have always fine shoes, and who can never stir out of the house except on a fine day. She has strong shoes, and has the use of her feet, and her hands, and her head."

"And knows where every thing can be found that is wanted," said Lucy, "and keeps every thing in order."

"Yet does not plague everybody," said Harry, "by being too exact. Some people take every book off the tables the moment one leaves the room, and put every thing out of the way, which they call putting things *by*."

"That would not suit Sir Rupert," said Lucy; "he said he did not like the look of any room where there were no books, and no signs of people being comfortably employed. I love the look of the library and the drawing-room at Digby Castle: very different from Newcourt Hall, a fine house aunt Pierrepoint took me to last year. My dear Harry, you can have no idea how tiresome it was! Lady Newcourt sat or lay on the sofa all day long, without having any thing in the world to do!"

"I suppose the poor woman was a cripple," said Harry.

"No, she was not a cripple," said Lucy; "she could

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dance, though she could not walk. But I suppose that some days she was ill, though she ate and drank like other people every day: yet it was always said that Lady Newcourt was so very delicate! There was to be no wind in the room, and no noise—all the company talked in whispers; but indeed that was no loss, for nobody ever said any thing worth hearing; nobody laughed, and nobody was allowed to yawn, excepting Lord Newcourt himself. He did yawn indeed; and aunt Pierrepoint was so cruel as to send me to bed one evening for a fit of yawning, which I caught from him—so I never looked at him again in the evening; indeed, I did not like looking at him at any time. At breakfast he was so pale and miserable; at dinner, so red and cross; and at night, so stupid and sleepy. I believe he was unhappy, because he had never any thing to say."

"But many people are happy enough when they have not any thing to say," interrupted Harry.

"Are they?" said Lucy, doubtingly.

"Certainly," said Harry. "*Men* are often happy when they say nothing: for one, I am sure I am often happiest when—"

"You! yes," interrupted Lucy; "but there is a great deal of difference between saying nothing, and having nothing to say; besides, Lord Newcourt not only had nothing to say, but nothing to do. Poor man! with all his riches, and his fine Newcourt-house, and Newcourt-park, he was the most unhappy person I ever saw. Now I will make his face for you, Harry."

Harry could not help laughing at Lucy's imitation of Lord Newcourt's dull face. She was going on mimicking his lordship's yawn, and the manner in which Lady Newcourt lolled on the sofa, and her drawling, affected voice; but her mother stopped her, by saying that she advised her not to acquire the habit of mimicry.

"Though it may be entertaining at the moment, Lucy, it is dangerous; it would make you disliked; and, what is worse, might lead you to say and do what is illnatured, and for which you ought to be disliked."

"Oh! mamma, I hope not," said Lucy; "I did not mean to be illnatured, but I cannot help seeing the difference between people who are sensible or agreeable, and those who are stupid, or affected, or disagreeable. How can I help, mamma, seeing the difference between Lord and Lady Newcourt, with their ways of going on

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at Newcourt-house, and Sir Rupert and Lady Digby, and their manner of spending their time at Digby Castle. You would not wish, mamma, would you, that I should not perceive the difference, and that I should like them all equally?"

"Certainly I should not, my dear Lucy," answered her mother. "I am very glad that you can judge and distinguish what it is in the characters, and manners, and habits of those you see which makes them agreeable or disagreeable, happy or miserable; and I should be very sorry, by what I say now, to put any restraint upon your expressing before me, as well as to your brother, your natural feelings and opinions."

"Oh, mamma, you need not fear that," said Lucy; "I should never feel afraid to speak before you; you tell me so gently and kindly when you think me wrong. Now, Harry, stop me, pray, the next time I begin to mimic anybody; and do not laugh, because that encourages me. I do not think I was quite right either, mamma, in another thing which, perhaps, you did not hear me say—about aunt Pierrepoint's being so cruel as to send me to bed for yawning. I should not have said that, because she was very kind to me, and I should be very sorry to be ungrateful—I should not have told the only little thing she did that was unjust."

"Very true, my dear Lucy; and I am sure, since you have this generous feeling, that I need say no more on the subject."

"Mother," said Harry, "I am going to ask you a question; not on my own account, for I cannot complain of anybody having been unjust to me—but when children have been punished unjustly, I want to know how they can help recollecting it."

"They cannot help recollecting it," said his mother, "but they can prevent themselves from talking or thinking of it, by which means they will avoid fixing the impression more strongly in the memory; and if, on the other hand, they try to recollect the kindness that has been shown to them, they will avoid the danger which Lucy so justly dreads, of becoming ungrateful."

"Yes, mamma," said Lucy, "I recollect hearing of that ungrateful girl, Miss Kitty Maples, who said—"

Her father interrupted her recollections, and gently desired her to look out at a place they were just passing. "Let us talk," said he, "of things, not of persons."

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He stopped the carriage for a few minutes, that they might look at the building which was near the road.

"What a strange, ugly-looking house," exclaimed Lucy. "It is neither a house nor a castle!"

"This was the mode of building," said her father, "which followed the time of Gothic castles in England. When fortified castles were no longer wanted for defence, people began to build houses with walls less thick, and without the moat, drawbridge, and portcullis; they retained something of the old castle appearance, by way of grandeur, or because they had been used to it. But this style of building, which Lucy dislikes, appears now to be useless; and that is one reason, I think, why it looks ugly. Those blind towers, for instance, in which there are neither loopholes to shoot through with bow and arrow, nor windows to light even a narrow staircase, are ridiculous."

A short time after this, as they drove through a town, they took notice of some very old-looking houses, which seemed to be built of wood; they had projecting windows, which, in the second story, jutted out far into the street; and others, like checkered frames of black wood and white plastering: on one of these they saw the date 1560. Such houses were common, as their father told them, in the times of Elizabeth and James.

"Did not we come through this town on our way to Digby Castle?" said Lucy. "I wonder that I never took notice of these odd-looking houses; did you, Harry?"

"No," said Harry, "we were thinking of something else, I suppose."

"But now," said Lucy, "that we have seen that Gothic castle and chapel, and that we have learned a little about such things, we take more notice of other buildings, and we feel interested about them, which is very pleasant."

As they went on a little further they met some loaded timber-carriages, and on one was a stone pillar, which, as one of the drivers told them, had been brought by water from far off; they were going "to a nobleman's place near hand, who is building a fine house." Harry's father found, that by turning a little out of their direct road they could see it, and he ordered the postillion to drive that way. When they arrived, they got out of the carriage to look at the building; the scaffoldings were up, and many workmen busy at work:

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but enough was finished for Harry to see the style of architecture. It was Grecian, with a portico supported by Doric columns. Lucy said the front looked very like the print of a temple which they had seen the day before, among the prints at Digby Castle. She could not recollect the name of it. Harry knew it was the temple of Minerva, but it had another name, the *Parthenon.** The architect heard what they said, and told them that this was built after the model of the Parthenon. He then spoke of some new buildings in London, and made use of several terms which they did not understand; but Harry had now seen and heard enough to make him anxious to learn more on these subjects. "How much there is to learn," said he, in getting into the carriage, "not only about building, but about every thing!"

"Yes," said Lucy, "that puts me in mind of 'Alps on Alps arise.' Harry, do you recollect that?"

"Alps on Alps!" said Harry; "what can you mean, Lucy?"

She began to repeat some well-known lines of Pope. Harry recollected them; he had learned them from her some months before this time, and he begged that she would let him try if he could repeat them. "Only give me time," said he; "when I stop, do not tell me the next word directly."

"Very well; if you are out I will not put you in till I have counted a hundred, and that surely will be time enough for you to think, and for me to be silent."

Harry began boldly—

"'Fired at first sight with what—'"

But with what or by what he was fired, he could not recollect. Lucy's hundred was fairly counted, and the last ten slowly tolled out.

He observed that these first lines, which he knew were something about the muse, he had always found very difficult, but that if Lucy would repeat four or five, he knew he could then go on cleverly. Lucy repeated—

"'Fired at first sight with what the muse imparts,
In fearless youth we 'tempt the height of arts,
While from the bounded level of our mind
Short views we take, nor see the lengths behind.'"

* From the Greek word *Parthenos*, The Virgin.

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"Stop," interrupted Harry, "here is my difficulty; I never could learn this by heart, because I do not understand it. 'Nor see the lengths *behind*:' *behind* I think should be *before*. Does not the author mean, that in climbing the height of the arts, we cannot see the length of the way before us?"

"He does; but the word *behind* is here used in another sense."

"What sense?" said Harry.

"Why, for instance," answered Lucy, "if you take away a little from what we have to learn, yet a great deal is left behind."

"Still there is a puzzle," said Harry, "as there always is when a word is used that has two senses; we do not know in which to take it."

"Well, I cannot help it," said Lucy, "let me go on. You must not be so exact in poetry. You will see by what is coming that I am right.

"'But more advanced, behold, with strange surprise,
New distant scenes of endless science rise.'"

"Science!" interrupted Harry. "Now, my dear, I can go on myself.

"'So pleased at first the towering Alps we try,
Mount o'er the vales, and seem to tread the sky;
Th' eternal snows appear already past,
And the first clouds and mountains seem the last;
But those attained, we tremble to survey
The growing labours of the lengthened way;
Th' increasing prospect tires our wandering eyes,
Hills peep o'er hills, and Alps on Alps arise.'"

"Quite perfect," said Lucy.

"And very well repeated," said his mother.

"Because I like these lines very much," said Harry. "In this poetry there is some sense as well as sound," added he. "It is true and it's pretty, and it's wise and it's witty."

"My dear Harry, that is rhyme! You will be a poet at last," cried Lucy.

"It will be a long time first," said Harry. "In the meantime here we are at home; here is Dame Peyton's cottage."

"And how well the roof looks, papa," said Lucy; "and there is Dame Peyton coming out to welcome us."

"Mamma, do not you think that porch would be

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much prettier if it were covered with honeysuckle. I will plant some there to-morrow, or cuttings of *clematis*, mamma, or some quick-growing climber."

It may be feared, that after all the dissipation—or, if dissipation be not the proper word, all the amusement and variety they had enjoyed during this last fortnight at Digby Castle, Harry and Lucy might find it dull at Rupert Cottage. It will be feared by those who best know the nature of boys, that after the great excitement of the workshop and the laboratory, with novelties mechanical, chymical, electrical, and aerial, opening to his view every day and hour, Harry would not be able to settle soberly to his necessary employments, and to plod on daily through the requisite portions of Greek, Latin, and mathematics. It will and must be feared by all who equally well know the nature of girls, that after the polite praise and incessant attention paid to her by those two most uncommonly kind people, Sir Rupert and Lady Digby, Lucy would droop like a plant suddenly removed from sunshine to shade.

Harry and Lucy's father and mother had their fears on these points undoubtedly, and with some reason—as all fathers and mothers, as well as masters and governesses, will confess, those only excepted who have been blessed or cursed with the care of early prodigies of prudence.

It should be remarked, that a few words said by Sir Rupert Digby to both Harry and Lucy, had operated on their minds to prepare them to watch over themselves on their return home. He had shown that uncommon degree of justice, which considers not only what is agreeable to young people at the moment, but what is to happen afterward to them, and to those who have the every-day care of providing for their happiness.

"You know, Harry, that if I were constantly living with you, I could not afford to give up to you so much of my time; and I hope you will prove to your father and to yourself, when you go home, that I have done you no mischief. Lucy will, I think, follow your example, whatever it may be, and this will be an additional motive for your assiduity."

Harry had these words in his recollection the morn-

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ing after he came home; and when left entirely to himself, in his own room, he went to his mathematics first, and then finished his portion of Greek and Latin, before he tried the new glasses in his camera-obscura. When Lucy knew this, she could not for very shame go, as she had been desperately tempted to do, to Nourjahad instead of to arithmetic.

After breakfast there was a new struggle in their minds: Harry was tempted by the sight of the books of shipwrecks, and was attracted by the titles, in large characters, of the loss of the Alceste and of the Winterton; and a page on which she opened in Nourjahad, describing the good genius crowned with flowers, was almost irresistible to Lucy.

"It will be an evil genius to you, Lucy," said her mother; "for if once it catches hold of you, it will keep you from every thing else; of this I warn you, for I have myself felt the power of that genius. Our duties must be done first, and then pleasures can be enjoyed in comfort."

"I understand you, mamma," said Lucy. "There! I have put away Nourjahad. But look at Harry, deep in the midst of the shipwrecks, though he advised me not to touch the books."

Harry threw down the Winterton, and ran off to his business.

Lucy had undertaken to make a frock for Dame Peyton's grandchild; but, to say the truth, it had been a long time about, and was in danger of becoming as yellow as certain Indian muslin dresses, which the black servants, who are employed to embroider them for their mistresses, wind round their waists, and trail about the house for months, working at the flower or the leaf in the intervals of domestic employments. Lucy's frock was an example of beautiful running, and equally beautiful back-stitching, with one little border of satin stitch, smooth as any, save that which Parisian fingers can perform. Her mother now reminded her that it ought to be completed, as the christening of the child was fixed for the next Sunday. There was one row of back-stitching yet to be done. Back-stitching, as everybody knows, is desperately tiresome; but what will not hearty good-will, aided by a little good sense, and a little good example, accomplish!

"Harry has done all he promised," thought Lucy,

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"and so will I. Mamma shall see that I am not spoiled by all the amusement we had at Digby Castle;" so thinking, and acting accordingly, she completely finished her work, and held it up before her mother's approving eyes.

It happened that Harry and Lucy were to spend that evening at home by themselves, their father and mother having gone to drink tea with the good old vicar, at a few miles distance. They had many pleasant things to do. Lucy, in the first place, went to try her frock on the baby. The joy that appeared in Dame Peyton's eyes overpaid Lucy for the labour of the work. The baby was asleep in the cradle, but the grandam, without ceremony, took it up to array it in its new vestments; and while Harry was out, digging the border ready for the cuttings of honeysuckle and clematis, round the porch, the grandmother and Lucy had leisure to admire how pretty the child looked in its christening robe. The dame only wished that its mother were at home to see it; but the mother had gone to Digby Castle to visit her husband, who was a footman there.

Harry came into the cottage just to let Lucy know that he had dug the border for her, and must now run off to finish a job of his own—some steps which he was making to a bathing-place, near Dame Peyton's cottage. He told Lucy that he should finish his work in half an hour, and that then he would come to her.

"Pray, my dear Lucy," said he, "wait for me at the seat; do not come to see whether I have done my work, for I promise you I will go to you as soon as I can, and then we will read the shipwreck of the Winterton together. Pray stay there patiently."

Lucy promised to wait for him patiently. There was, she thought, little danger of her not keeping this promise, when she had such a book as Nourjahad to read. She read, and read on; at last, pausing at a good resting-place, just where Nourjahad sinks into his second hundred years' sleep, Lucy looked round her, and saw the lengthened shadows of the evening. There was within view of her seat a projecting point of rock, whose shadow Harry had always consulted as his dial. Lucy now looked at its long dark form upon the water, and said to herself—

"It must be growing late, very late: I wonder Harry is not come"

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She stood up, and looked along the path—no Harry—nothing was to be seen. She considered what could have kept him so long.

"Perhaps some of the steps were wrong," said she to herself, "and he has stayed to alter them. I have a mind to go and see—but no, he begged that I would be patient, and particularly desired me to stay for him here."

She took up her book again, and read on a little further, but with divided interest; every now and then looking up to see whether he was coming; at length, unable to fix her attention any longer, she put down the book. For the last two pages she did not know what she was reading. She had been inventing all manner of things that could have befallen Harry.

"I must go and see what has become of him," thought she. "Why should not I? He bid me wait for him, that we might read the shipwreck here together; but if I stay any longer it will be so dark that we cannot read. Hark, he is coming." No, it was only the rustling of the leaves.

"I cannot wait any longer—I may be of use to him—I *will* go. Oh! there he is! I see him among the trees! I am glad I stayed."

It was only a dog—but a boy followed, running full speed up the path towards her. Dame Peyton's grandson! Lucy tried to go forward to meet him; but she was so much frightened that she could not stir.

"WHAT is the matter? Where is my brother? Oh, speak," cried Lucy, when the boy came near enough to be heard.

The boy, trying to look and speak composedly, answered, "Master Harry is at home, miss, by this time; I met him at the turn of the road with master and mistress, and Master Harry sent me off here to tell you, miss, not to wait no longer for he, but to come home, if you be pleased, miss."

"Is that all?" said Lucy, relieved for a moment from her fright. "But that is not all, I am sure, by your look. Something bad has happened—tell me at once."

"Why, miss, our house has been on fire, and half the roof burnt, they say. I can't tell how it happened; I

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only met Master Harry and the folks as I was a going towards home, just at the turn of the road. Grandmother was the first I met, and she asked me where I had been; and I said with the cows; then she told me how our house had been all in a blaze, more than an hour ago, and that the child in the cradle would have been burnt to death only for Master Harry: not a soul was near the house but he when the flames broke out, grandmother told me. She was gone to the wood to pick sticks—mother was at the Castle—Betty had just runned out, I can't say where—"

"Oh, never mind that, tell me about my brother," cried Lucy.

"I can't, miss, for I don't know no more than that he is badly burnt. I saw his father carrying of him home."

"*Carrying* him! then it must be bad indeed," thought Lucy.

She asked no further questions, but set off running home as fast as she could. Want of breath forced her soon to slacken her speed, and the boy overtaking her, begged her not to be so much terrified.

"I cannot think Master Harry is *very* badly hurt, because he spoke quite like his self—strong and cheerful—and his face is not burnt, miss, that I am clear sure of, for I saw it quite plain, as he turned his head back over his father's shoulder, beckoning to me, and sent me off with his love to you, miss, and to beg you would not be frightened, which I had not time to tell you."

Lucy ran on while the boy was saying this: she felt as if she could not get on fast, do what she would; at last she reached the house, and made her way through the people who were standing in the passage. She tried softly to open the door of her mother's room, where she heard that Harry was, but it was fastened: her father from within opened it, inquiring eagerly if a messenger he had sent to the apothecary's in the village had returned.

"Here he comes," said Lucy, "with a bottle in his hand."

Her father seized the bottle, asking if the surgeon was coming.

No, he was gone to a patient ten miles off, and would not be back till morning.

Her father had not seen Lucy, but she caught hold of his arm, and asked if she might see Harry!

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"Yes, you can help your mother. But can you command yourself, Lucy? Do not come in, if you cannot—"

"I can—I will—" said Lucy. "Only tell me what I can do for him;" and throwing off her bonnet and gloves, she went in. It was worse than she expected. When she heard groans from Harry, who bore pain so well, she knew he must suffer dreadfully: going nearer, she saw him lying on his side, the arm down to the elbow covered with huge white blisters, or in some places raw, and of a fiery red, his whole frame writhing in agony! Lucy could not help shrinking at this sight, but she made no exclamation. She looked at her mother to inquire what could be done. Her mother was wetting some soft linen rags with spirits of turpentine, which her father poured out of the bottle. These were gently laid on the inflamed parts of the arm, taking great care not to break the blisters. Lucy could scarcely bear to see it done—the first touches gave Harry such torture, even with all his mother's care and delicacy of hand. She was now desired to take her mother's place, and to keep the linen on Harry's arm and shoulder wet with the turpentine. Lucy's hands trembled when she began, but they soon became more steady; the consciousness that what she was doing would relieve her brother, gave her courage. To her unspeakable satisfaction, his groans became less frequent; in a few minutes his features, which had been all drawn up, came to themselves; and opening his eyes for a moment, he looked up at Lucy, and said, "Thank you, dear Lucy."

His father and mother were employed in melting basilicon ointment, and mixing it with the oil of turpentine, in a small saucepan; a process that required great caution to prevent the vapour of that very inflammable oil from taking fire. This preparation was now ready. His mother, with a soft feather, smeared it over the whole surface of the wound, and then spread the rest of it on a large rag, which she gently laid over all. Scarcely was the operation finished, when Harry's head sunk upon his pillow, and he dropped asleep; this was in about fifteen minutes from the first application of the turpentine.

Lucy left the room, by her mother's desire, to go to bed; and as she was moving very softly through the passage, she found Dame Peyton sitting there, waiting

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for some account of Harry. When she heard that he was easy, and asleep, she went away repeating—

"Bless him! God bless him!"

For some days Harry was so feverish, that the surgeon had forbidden all conversation in his room; but at last he was allowed to talk *a little*, and Lucy being most anxious to hear how the accident had happened, she said, "I left you, Harry, when you were going to work at the steps. Go on from that."

He had been at work, he said, very busily, finishing those steps, and growing warm, had thrown off his coat, when suddenly observing a great light over the trees, near Dame Peyton's cottage, he went up the bank, and saw flames coming from the roof; he ran on to the house—the house door was locked—he knocked and called in vain, but hearing the cries of the child, he broke the fastening of a lattice window, and sprung into the kitchen; thick smoke almost blinded him; he knew, however, that it was in the little parlour, and feeling along the wall, he was partly guided by its cries, till these were overpowered by loud yells, which burst out in some place over his head. He found the parlour door, but it stuck so fast that he could not push it open. He heard the rustling of the flames—he pushed again with all his force, and the door gave way. Firelight now glared upon him from the roof; Harry saw the cradle at the opposite side of the room; he snatched up the infant, and made his way back through the suffocating smoke and pieces of blazing thatch, which were now falling. He put the infant out first; in jumping after it, he perceived something on fire about himself, and when he came into the air, he found his shirt-sleeve in a blaze; he threw himself on the ground, in hopes to extinguish the flame; but, as fast as he extinguished it in one place, it appeared in another. No help was near. The pain was intense!

This was all Harry could tell of what had happened, till he awakened again, as he described it, and heard a confusion of voices, and found himself in his father's arms.

Dame Peyton had come morning, noon, and night, to inquire how he was, and very much wished to see him. He was now able, in Lucy's opinion, and in his own, to see her, and Lucy admitted both the dame and the mother of the child, who were anxiously waiting at the door.

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The mother softly approached his bedside, with her infant in her arms, judiciously considering that no sight could be more gratifying to Harry. Their thanks were silent—the tears came into their eyes as they looked at him, and Dame Peyton uttered one low and fervent "God bless him"—not a word more. Even Harry, with his horror of flattery and dread of being thanked, was pleased; especially when the infant stretched out its little arms towards him, and smiled.

Harry asked if they had found out what the yells came from which he had heard in the loft?

The dame told him that they came from her cat, which had been burnt there with its kittens.

He then wished to know if the whole of the new roof had been burnt, and how it had caught fire?

Yes, the roof was all burnt, but not much other damage had been done. How the house first took fire no one could tell. Betsy declared that all was safe when she went out;—no clothes—nothing left near the fireplace, and the fire was very low. As far as they could judge, the fire had broken out in the loft.

Harry thought that perhaps the chimney might have some crack in it; but no, it had been examined, and Dame Peyton repeated that it was most extraordinary that a fire should break out in a loft when nobody had been in it, or so much as up the stairs which led to it, for two days before—of this Betsy and she were certain. No creature had been up there.

"Except the cat," as Lucy observed. It just occurred to her that the dame's favourite tabby cat had been the cause of all the mischief. Lucy recollected to have often seen her lying in the ashes almost under the grate. She thought it possible that Tabby had gone up to her kittens in the loft with a bit of cinder sticking to her, which might have set fire to the straw in which she and her kittens were lying.

This seemed very likely to all but Dame Peyton, who could not bear that the blame should be brought home to her poor dear tabby. In zeal for the memory of the best of cats, Dame Peyton forgot the under tone proper to a sick-room, and she was in loud demonstration of the impossibility of that which probably had happened, when the door opened, and the surgeon entered. The room was cleared instantly. Even Lucy, notwithstanding her protestations of innocence and promises of per-

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petual silence, found herself in the passage, and the door closed against her.

The surgeon pronounced that Harry had still much fever; and he found, that though the burn was rapidly healing, yet his patient could not raise himself, nor turn in his bed, without much pain. Upon further examination, the surgeon discovered that Harry had received a severe strain, the consequences of which might, he said, be very serious. He feared that it would be necessary for Harry to continue confined to a horizontal position for some time.

"How long, sir?" said Harry, in an intrepid tone.

As far as the surgeon could guess, it would probably be some weeks before Harry could walk. He might attempt it sooner, but if he did, it would be at a great risk; on the contrary, if he submitted quietly and steadily to this confinement, in all human probability he would perfectly recover, and be as well and active as ever.

The moment he was convinced of the reason and necessity of the case, Harry was perfectly submissive, and, better than submissive—resolute to bear and forbear whatever was prescribed. When the surgeon had left the room, Harry, looking up, and seeing his mother's anxious eyes fixed upon him, smiled, and said, "Do not be afraid *for* me, or *of* me, mother; you shall see how good and how well I shall be; a few weeks will soon be over; and though I am to lie flat, I may use my hands and arms, I suppose, as soon as my burn is well; and I can read and entertain myself, and, what is better, I shall have Lucy to read to me, and talk to me. You need not pity me, mother; I am not to be pitied at all. Was not it very fortunate that I was there, and in time to save the child? Think of the delight I felt when I got it safe out of the window, and the joy of hearing it squall again, of being certain it was alive! I am sure that, and the pleasure I have just had in seeing the mother and child, and the old woman too, are enough to pay me for all. The surgeon, you know, said we might thank God it was no worse, and I thank God it is so well. Think, mother, of my having been the means of saving a fellow-creature. I am sure I do, with all my heart and soul, thank God."

After all this excitement, his nurses wisely left him to repose. He fell into a sound sleep. How long he might have slept none can tell, for he was wakened,

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much to Lucy's provocation, by a loud knock at the hall door. It was Sir Rupert Digby—not he, surely, that gave the thundering knock; no, that was his fool of a groom, for even wise men sometimes have foolish grooms.

Sir Rupert Digby was allowed to come into Harry's room, and Lucy was struck by the melancholy expression of his countenance, which did not clear up when Harry's own cheerful voice assured him that he now suffered but little, and that he hoped to be quite well in a few weeks, and able to go to Digby Castle; at these words Sir Rupert shook his head sorrowfully, and said—

"We shall not be there to meet you, my dear. We are obliged to set out immediately for the Continent."

One of Lady Digby's nieces, as they had heard this morning, had been taken dangerously ill, and they were going to her. This was a farewell visit from Sir Rupert. Lady Digby could not come—she was too busy, and too unhappy.

Harry and Lucy were very sorry, but they were not so selfish as to think much of their own little disappointment, and Harry was grateful to Sir Rupert for thinking of him at such a time. Sir Rupert had indeed thought of every thing that could contribute to Harry's ease and comfort in his absence, and now offered the key of his library, and the use of his prints and instruments, which were most gladly accepted.

Sir Rupert promised not only to write to Harry's father, but to Harry himself, if he should see any thing on the Continent that he thought might amuse or instruct him.

"Farewell, Harry," said he. "May God bless you, and keep alive in your mind the benevolent feelings you possess, and the noble desire to improve the faculties with which He has endowed you."

During some succeeding days, Harry's pulse and his own account of himself were at perpetual variance; he asserting that he was well, quite well, while his pulse pronounced morning and evening the reverse. The surgeon preferred the report of the pulse; and Harry, bound by his wise resolutions, was obliged to submit to Doctor Diet and Doctor Quiet, and to have nothing yet

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to do with Lucy's favourite, Doctor Merryman. Harry was neither to talk or to be talked to; neither to read or to be read to; neither to entertain or be entertained. Lucy, with a face becoming the most discreet of little nurses, sat by his bedside, knitting for him future comfortables, or went about in silence, but never on tiptoe, for that Harry detested; he always wakened when any one went on tiptoe; but moving quietly, yet without any appearance of constraint, she freed him from the fear of keeping her prisoner. In about a fortnight his arm healed; but, from the effects of the strain, he was still obliged to be a prisoner upon the sofa: for some hours lying, as required, quite flat; at others, raised from that tiresome horizontal penance to a position which, with all the advantages of rest, restored him to the use of hands, arms, and eyes. This privilege he owed to the kindness of his friend Sir Rupert, who, in passing through London, saw and sent him a bed, invaluable to all in his condition.

The first day it came Harry begged that it might be placed in his view, so that he might examine its construction. He saw that the bedstead was hinged in the middle, and that either end could be sloped to any angle that was desired, and firmly fixed there by a supporting frame, just, as Lucy said, like her music-desk. There were various other contrivances which delighted Harry; first as a mechanic, and then as an invalid. He had himself raised and lowered till he found the angle which was most easy and convenient. Then Lucy was employed to make a pasteboard quadrant, and to fasten it on the side of the bedframe, so that he could most accurately, as she said, signify to her his *inclinations*. "You must allow me that pun, Harry."

He allowed it to her in consideration of her well-divided quadrant. To say the truth, the quadrant was found of little use. It was easier to say, "Put me up to the third notch, or to the fifth notch," as the case might require. But it is natural to ingenious people, especially when young, to make use of superfluous inventions upon common occasions.

Lucy more than ever rejoiced at having acquired some taste for Harry's pursuits; because, as she had been his best little nurse when he was sick, so now she could be his most agreeable companion when he was recovering.

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Established on this most convenient of beds, his next object was to add to it a reading and writing-desk, which, in its kind, he determined should be as perfect as the bed. Sundry trials were made sundry ways, and at last a desk was contrived by Harry, and executed by the carpenter, which was perfectly firm, and yet removeable at a moment's warning, ceding its place to the dinner, breakfast, or tea-tray.

It is but justice to Harry to mention, that before he thought of all these conveniences in his own establishment, he had been intent upon getting the roof repaired for Dame Peyton.

Sir Rupert had placed his carpenter under Harry's orders, and had agreed to his request, that the house was now to be slated. Harry looked at his old plan again; and, with his father's concurrence, made some improvements in this second edition of his roof. When the ingenious and admirable machinery of Mr. Brunel was a few years ago burnt to the ground, he replied, to a letter of condolence, that he found sufficient consolation in the hopes of materially improving it.

As soon as the surgeon's permission was obtained, Harry had great enjoyment in the books which his mother brought for him from Digby Castle: among these were Scott's poetical works. Harry formerly thought he had no taste for poetry; but now, when his mother read to him the beginning of the "Lay of the last Minstrel," he felt surprised at being so much pleased with it, as much even as Lucy. His mother having refused to let him hear more than one canto the first evening, he looked forward with eagerness to the time when reading was to recommence. This now appeared the most delightful hour of the whole day; and, but for the shame of not allowing his mother time to take breath, Lucy and he would willingly have listened to canto after canto, and poem after poem, from the "Lay of the Minstrel" to the "Lord of the Isles."

But his mother managed their pleasures so that they not only lasted the longer, but were relished the more keenly—not swallowed without being tasted. Lucy had this art yet to learn.

"Mamma," said she, "I think you are too careful not to tire him with reading; I think he cannot have too much entertainment. It is only the stupid parts of books

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which tire one. All that is necessary is to pick out the plums, and to have a variety."

"He would, I think, be soon tired of plums, my dear," said her mother, "and a great variety would weary him still more."

"Well, mamma," whispered Lucy, "will you let us try the experiment? I should like to see whether he could be tired of plums. I will pick out what I know he likes best, and never give him too much of one thing at a time—you will see, mamma."

"Try, my dear, and you will see," said her mother.

Harry had now recovered sufficiently to resume some of his usual employments; and he begged Lucy one day to bring Euclid, that he might take his morning half-hour at geometry before they did any thing else. Lucy was of opinion that he ought not yet to read any thing so very serious. When the surgeon came, Lucy extorted a similar opinion from him, and therefore determined next day to try her experiment. Accordingly, at the hour which Harry had set apart for his mathematics, she stole in softly behind him, and while in the midst of the square of the hypotenuse, she laid beside him a fine large butterfly, which in the most obliging manner rested there with outspread wings.

"I will look at it in one instant," said Harry, as Lucy called upon him to admire the beautiful purple eyes on the wings. "Only just wait one moment till I come to the Q. E. D."

But as he spoke, the butterfly made a little motion, as if preparing to rise.

"Take care that it does not fly away," cried Harry.

"There is no danger," said Lucy.

In another instant, before Harry came to his Q. E. D., the butterfly made a sudden jump up, and alighted upon Harry's hand. He started when he felt its cold tail and bony body. It was no butterfly, but a sort of skipjack. Lucy had been at work painting the wings from sunrise; and for all the labour bestowed on the feather-cinctured head and proboscis, she was overpaid by this start of Harry's. Imboldened by her first success this morning, she closed Euclid decidedly, and drew it from Harry's hands.

"Harry," said she, "for the rest of this day you shall have nothing but plums, and I have plenty in store for

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you of all sorts. You will not, I hope, be above feasting on such pretty and good ones as I have here for you;" and she laid down a basketful of books, in each of which there were various paper marks.

"I am not above any thing good or pretty," said Harry; "but I think it is too early in the morning: if you begin now, you will scarcely be able to supply me all day long."

"Try, and we shall see, as mamma says."

"Besides," continued Harry, "I think plums all day long would make anybody sick."

"No, no," said Lucy, "you shall have such variety—only trust to me; give me leave to entertain you all this day, Harry, will you?"

Let those who have tried the experiment say which has the hardest part, he who undertakes to entertain, or to be entertained, all day long. Lucy had made a good beginning, however, having got rid of Euclid with her butterfly. From her butterfly, she went on to the "Butterfly's ball," and the "Grasshopper's feast," and the delightful "Peacock at Home." By some strange chance Harry had not yet become acquainted with them.

"Mamma told me," said Lucy, "that this little book has had the honour of being quoted by a great man in the House of Commons. These are the lines he repeated:—

> "'For birds are like men in their contests together,
> And in questions of right can dispute for a feather.'

"But there is the breakfast-bell," said Lucy, interrupting herself, "I must go for your breakfast." Having set it before him in order due—"Now I must leave you for a few minutes, while I eat my own; but I shall soon return to feed you with plums. Upon her return Lucy brought up the newspaper, which contained an extract of a letter from Sir Thomas Stamford Raffles, late governor of Sumatra, giving an account of the loss of the ship Fame. After describing the alarm excited by the cry of "Fire," and the hurry with which Lady Raffles and her children were thrust into a boat, he says—

"All this passed much quicker than I can write it—we pushed off as the flames were issuing from our cabins. The masts and sails

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now taking fire, we moved to a distance sufficient to avoid the immediate explosion, but the flames were coming out of the main hatchway, and seeing the rest of the crew, with the captain, &c., still on board, we pulled back to the ship. As we approached we perceived that the people were getting into a boat; we hailed her—'Have you all on board?'—'Yes, all save one; Johnson, sick in his cot.'—'Can we save him?'—'No, impossible.' At this moment the poor fellow, scorched I imagine by the flames, roared out most lustily, having run upon deck. 'I will go for him,' says the captain. He pulled under the bowsprit of the ship and picked the poor fellow up—'All lives safe, thank God! Pull off from the ship.' We then hauled the boats close to each other, and found the captain fortunately had a compass. Our only chance was to regain Bencoolen; and the captain undertook to lead, no possibility being left that we could again approach the ship, for she was now one splendid flame, fore and aft and aloft; her masts and sails in a blaze, and rocking to and fro. The alarm had been given about twenty minutes past eight, and in less than ten minutes she was in flames; there was not a soul on board at half past eight, and in ten minutes afterward she was one grand mass of fire.

"Without a drop of water, or a grain of food, or a rag of covering, except what we happened at that moment to have on our backs, we had embarked on the wide ocean, thankful to God for his mercies. Poor Sophia, having been taken out of her bed, had nothing on but a wrapper, neither shoes nor stockings; one of the children had been snatched out of his bed after the flames had attacked it—in short, there was not time for any one to think of more than two things: Can the ship be saved?—No—Let us save ourselves then—all else was swallowed up in one great ruin. The ship continued to burn till about midnight, when the saltpetre, of which she had 250 tons on board, took fire, and sent up one of the most splendid and brilliant flames that was ever seen, illumining the horizon to an extent of not less than fifty miles, and casting that kind of blue light over us, which is, of all others, most horridly horrible. Rain now came on, but fortunately it was not of long continuance, and the night became serene and starlight. The men behaved manfully; they rowed incessantly, and never did poor mortals look out more anxiously for daylight and for land than we did; not that our sufferings were any thing to what has often befallen others. About two o'clock we landed safely, and no words of mine can do justice to the expression of sympathy and kindness with which we were hailed by every one. If any proof had been wanting that my administration had been satisfactory, here we had it unequivocally from all. There was not a dry eye, and, as we drove back to our former home, loud was the cry of 'God be praised!'

"The property which I have lost, on the most moderate estimate, cannot be less than 20,000*l*. But the loss which I have to regret beyond all is my papers and drawings; including my notes and observations, with memoirs and grammars, dictionaries and vocabularies, and a grand map of Sumatra, on which I had been employed since my first arrival here. This, however, was not all—all my collections in natural history, and my splendid collection of drawings, upwards of a thousand in number! And, to conclude, I will merely notice, that there was scarce an unknown animal, bird, beast, or fish, or an interesting plant, which we had not on board. A living tapir,

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a new species of tiger, splendid pheasants, &c. &c., all *domesticated* for the voyage. We were, in short, a perfect Noah's ark: all, all, has perished; but, thank God! our lives have been spared, and we do not repine."

Harry was as much interested by this as Lucy had expected. He admired the activity and courage displayed by these sufferers during the moment of danger; and observed to his sister, that the kindness with which Sir Stamford was welcomed on shore, showed what a good governor he had been. He looked again at the account, and while Lucy and he were considering for which of the losses they were most sorry, Lucy exclaimed, "Hark! a knock at the door; that is to tell me that my magnum bonum plum is ready, and you shall have it."

She opened the door, and received from the hands of the servant Harry's camera-obscura, in which, with her father's assistance, she had fixed the new glass. Lucy had prepared every thing; she had a stand ready, so that Harry could see and enjoy it completely. He did enjoy it as much as she could have expected: his eye was fixed upon the landscape which he saw before him; and he admired the quiet cattle slowly moving on the paper, and the winding path, and the fresh green trees, with their light boughs dancing in the sunshine.

While Harry was looking at them, and considering what he saw before him, Lucy exclaimed, "I know what you are thinking of, Harry,—of the coloured shadows we used to see on the wall of our room at home."

She darted out of the room, and returned with a quarto volume. "Now, Harry," cried she, "for blue shadows and green! black shadows and red! I will read you all about them."

She sat down and read—

"It is rather remarkable, that so curious an appearance as this of blue shadows should pass unnoticed near a century, and should then be hit upon by mere accident. Buffon, as he was busy about something else, observed that the shadows of trees which fell upon a white wall were green."

Here Lucy read a curious but long account of his observations upon green and indigo shadows, seen in different circumstances, ending with, "any person may see a blue shadow, if he will only hold his finger before a piece of white paper at sunrise or sunset."

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Harry said he should like to try this.

"Is it not all very entertaining?" asked Lucy.

"Very," said Harry, "but is there not some explanation given? What is the cause of the different colours of these shadows?"

"There is a great deal about it in this book," replied Lucy, "and the history of a great many experiments which different people have tried."

"Let me see," said Harry, stretching out his hand for the book.

"No, no," said Lucy, "they would be too difficult for you *now*—besides, they would not be plums, and you are to have nothing else to-day—I will put a mark in the place for you, and you may study coloured shadows another time."

Lucy then turned over the pages quickly to find a favourite anecdote about a poor old woman who lived at Montpelier: but in her search for the old woman, she was stopped on her way on account of a prodigious rainbow lying on the ground, its colours almost as lively as any ever seen in the heavens. She chased the rainbow into a chapter infinitely too deep for her comprehension, and found herself in the midst of single, double, and treble bows, and inverted bows. In company with Sir Isaac Newton and Bernoulli one minute, the next with M. Bouguer on the mountains of Peru, or Dr. Halley in Chester, till neither she nor Harry could tell where she was. She abandoned her chase of the rainbow, but she stumbled upon her long looked-for old woman of Montpelier.

"And what of her?" said Harry; "has she any thing to say to the rainbow?"

"Nothing in the world, my dear," said Lucy; "quite another thing: she had bought a piece of meat one day in the market, and hung it up in her bedroom."

"Dirty old woman!" said Harry.

"Poor old woman!" said Lucy: "and at night (a very hot night it was) she saw on this meat, which was hanging opposite to the foot of her bed, what do you think? a bright light, so bright as to illuminate the wall. The next day this luminous meat, which she thought was bewitched, was carried to Henry Bourbon, Duke of Condé, the governor of the place, who viewed it with astonishment for some hours!"

Some hours! Harry thought that was too much,

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though he would gladly have been allowed to pause upon it for a few minutes. The light, as he guessed, was phosphoric, and he reminded Lucy of a shining light which they had once seen in the shell of a decayed lobster; but Lucy rapidly turned over to a new page, with an account of some experiments which Boyle tried on phosphoric substances, placed in the airpump. Then she went on to a story of Doctor Beale's cook, who was boiling some mackarel, and saw the fish and the water shining as if on fire, and the children of the family diverting themselves by running about the house with the luminous drops, which were as large as penny-pieces—"Think of that, Harry."

She then ran on to Father Bourze's voyage to the East Indies, during which he noticed a wonderful luminous appearance in the sea, by which he could read in the night.

Harry wished to know whether it proceeded from putrescent substances, or from luminous insects. He asked Lucy if she recollected having heard a captain in the navy, a friend of his father's, say, that he had brought to England, and given to Sir Joseph Banks, some luminous animals, three inches long, which he had taken up from the Southern Ocean, and which gave so strong a light that he could read a very small print by one of them, which he had put in a bucket of salt water.

Lucy could not spare time to answer—she wanted to read what would entertain him, as she hoped, more than any luminous insects.

"The Bolognian stone! Harry, did you ever hear of this stone, which gives light in the dark?" and she read on for some pages, till she recollected quite a different thing, which she was sure would amuse Harry still more; and throwing aside that book, she took up a description of the Esquimaux houses, built of blocks of snow, with well-turned domes, and with windows of thin ice. This interested Harry very much; but as Lucy thought that he began to look a little tired, she hurried him out of the house of snow, and read some anecdotes of the Esquimaux lady, Illigluk, who understood maps, and drew charts so well, but whose head not being able to bear the praises of the English sailors, she became so conceited and affected, that she could do nothing but sit in her chair on deck, practising her airs.

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Lucy again changed to something new, and travelled from the North Pole to Chili, and from Chili to Ali Pacha, and read the account of his delight in seeing ice made in an airpump, which had been sent out to him from Europe! and in this manner she went on almost all the morning, flying from one book to another. Whenever she thought she saw fatigue in Harry's face, she turned to a fresh subject, still fancying that, by variety of entertainment, she should revive his attention, and please him more and more; but at last, observing his head resting on his hand, she stopped short and said, "Oh! Harry, does your head ache?"

Harry confessed it was beginning to ache a little.

"I am very, very sorry," said Lucy. "Why did you not tell me sooner that you were tired?"

"I did not know it till my head began to ache," said Harry.

"I thought I was amusing you all the time," said Lucy. "You told me that every thing I read was very entertaining."

"So each thing was," said Harry, feeling for her disappointment, "but altogether they—"

"My dear Harry, say no more," said Lucy, sorrowfully; and, settling his cushions, she added, "There, lay down your poor head now, and I will go away to mamma."

Harry was so much worn out, that Lucy was not allowed to see him all the rest of the morning; and as she wished her mother good-night, she said, "I see you were quite right, mamma; I tired Harry with plums long before the end of the day."

"My dear Harry, how do you do this morning?" said Lucy, coming in with a timid step and contrite look.

"Very well!" cried Harry, briskly, "perfectly well, thank you."

"You have no reason to thank me," said Lucy, "for giving you the headache."

"But my headache is gone now, and it was a good experiment, after all."

"A bad experiment for you, I think, but good for me," said Lucy; "for now I am convinced for life, that plums

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all day long will never do, let them be ever so sweet and well picked—that mine were well picked, you will acknowledge, Harry. Did you sleep well?"

"Yes," said Harry, "and wakened this morning as fresh as ever, and then I spent my time very happily in thinking."

"That is what I do sometimes, when I waken early," said Lucy, "and I think of a hundred different things, till I do not know what I am thinking of, and fall asleep again. Was that the way?"

"No," said Harry, "that was not the way with me, for I was thinking only of one thing."

"What was that?" asked Lucy.

Harry hesitated—"I should like to tell you, Lucy, but perhaps it might vex you."

"Oh! no," said Lucy, "you cannot vex me, I am sure."

"Well, then; I was considering why I was so much tired yesterday; and I think I have found it out—shall I tell you?"

A cloud passed over Lucy's brow. At this moment her mother came in with Harry's breakfast. "Do you think, mamma," said Lucy, "there could be any use in Harry's going all over what passed yesterday, to tell me how I tired him so much? You know I am quite convinced of my mistake."

"I am sure of that," said Harry, "but there were many reasons why I was so tired; I did not know them all myself, till I thought over the whole affair this morning, and it may be of use to you to know them."

"I do not see much use," said Lucy. "What do you say, mamma?"

"I say that Harry had better eat his breakfast first, and that afterward, as the object of a kind sister and good nurse must be to entertain without fatiguing your patient, you had better listen to his reasons."

"Well, mamma," said Lucy, "as I do wish to be a good nurse, I will ask him for them as soon as he has done breakfast."

Accordingly, the breakfast being despatched, Harry began with the comfortable words, "I will be as short as I can. In the first place, you know that my mind cannot turn short round, like a crane-necked carriage, whenever and wherever you please: yours can, Lucy. Therefore it was more difficult to me than it was to you

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to turn so frequently from one thing to another, from coloured shadows to luminous insects, and from the old woman at Montpelier to Ali Pacha. But besides this, I was continually disappointed; and you know, Lucy, disappointment tires."

"Oh yes, I allow that," said Lucy; "I felt tired yesterday myself, the moment I was disappointed in my hopes of entertaining you; but how were you disappointed, and continually too? What do you mean?"

"I mean, that when my interest was excited by any thing you read to me, I was disappointed in not having time to understand it completely."

"I know it would have tired *me* much more," said Lucy, "if I had been obliged to study every thing to the end of the chapter."

"I think not," said Harry. "I think, Lucy, we are always better satisfied when we get to the bottom of one thing before we fly off to another."

"I am afraid that is not always my case," said Lucy; "but, at all events, it would not have been good for you to have gone on with Euclid all day long."

"Probably not," said Harry; "but I have still another reason for you. All the time you were reading, I was anxious; and I am sure anxiety tires as much as disappointment."

"But what anxiety had you?" asked Lucy.

"I was anxious not to be tired, while you were trying all you could to entertain me; and the more I wished this, the more weary I grew."

"And that was the very thing," said Lucy, "that made me hurry on from one thing to another, for I thought sometimes you looked fatigued. But still, Harry, you see it was not the plums alone: you were tired because you were disappointed and anxious."

"Yes," said Harry, "but the plums in themselves would have been too much. In time, one grows tired of being entertained."

"Would it then mend the matter to read tiresome things between the entertaining ones?" said Lucy.

"I am not sure but it would," replied Harry. Lucy laughed. "I mean," continued Harry, "if the tiresome things are worth reading; for tiresome things often leave useful impressions behind them; besides, there is a pride in getting through them; and if there is any difficulty, we have the pleasure of success."

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"I agree to that," said Lucy; "a little success, or a little bit of praise, refreshes me very much. And I think, Harry, you will allow that you are not tired now; for I am sure you have got to the bottom of this subject."

Harry was this day to arrange his occupations and amusements in his own way. While Lucy went out to her garden, he applied to Euclid for half an hour, that he might, as he said, earn an appetite for a story which he knew Lucy had in store for him—Nourjahad. He stopped her at Nourjahad's first sleep of a hundred years, at a moment when he was very curious to know what would come next—what would happen when he awakened. Then he went to a translation of a passage in Euripides, which he said he would prepare for his father; after working at that for some time, he amused himself with the shipwreck of the Winterton, in which he was much interested; but his father coming in, an hour was spent between Greek and English tolerably successfully, and therefore without fatigue. The next hour was spent in trying to complete an invention which he had long had in contemplation. Lucy went to her own affairs while he was thus occupied, and promised to return in half an hour; but at the end of this time, when she appeared, he told her that she might stay away another half hour; and then she found him looking very much tired, for he had not been successful in his invention, and he had persisted in thinking of it too long. He was, however, refreshed by some more of Nourjahad, in which he was very happily engaged, when Lucy was summoned by the sound of the dressing-bell. Looking at each other, they both exclaimed, "So soon!"

We cannot pretend to say that on the following days Harry was always equally successful in arranging his occupations, so that "labour and rest should equal periods keep." Much greater philosophers than he daily fail in this attempt, and Harry, it seems, was not always so great a philosopher as he thought himself. Though he had been very grand in resisting the temptation of reading too much of Nourjahad at once, yet one day temptation came, which he could not resist, in the form of Baron Trenck's Memoirs. Lucy began to read it to him after his morning's mathematics; but after reading an hour, she observed that it was time to go to her garden. Harry entreated her to go on half an

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hour longer, if she was not tired. "Not in the least," said Lucy, "I am only afraid of tiring you." Half an hour—an hour longer she went on, and then she left him to repose; but no repose could Harry take, he was so anxious to know whether the first hole that Baron Trenck made in his dungeon wall was discovered by his jailer. He eyed the book, which Lucy had left on the table, as she thought, out of his reach; but with the aid of a pair of lazy tongs, he drew the tempting volume to him, and never stopped till it was finished. Lucy coming in, he asked her voraciously for the second volume. She was astonished at his having already devoured the first, and demurred, but soon yielded to his imploring emphasis on the persuasive little word, "*Do* let me have it, my dear." In short, the whole day was spent upon it. When he had finished, he felt as if there was a universal blank in the world. Nothing could interest him after this strong stimulus, and in the evening he was obliged to acknowledge, that he was "very much tired indeed."

Lucy demurely observed, and Harry readily agreed with her, that we may tire ourselves as much by going on too long with one entertaining thing, as by flying about to a variety.

It must be said on behalf of Harry, that his confinement to the sofa rendered it somewhat difficult for him to get through the day without fatigue of mind, because he was debarred from that kind of labour of body which we call exercise, and which is found most useful in restoring the freshness of the spirits. Lucy's power of making him laugh had been often found the best substitute for bodily exertion; and she again satisfactorily proved, that "Laughter holding both his sides," takes and gives exercise in the most salutary manner.

"Mamma," said Lucy, when they had done laughing, "it was very well worth while to listen that day to Harry's reasons, I have not tired him so much since."

"Never," cried Harry. "Indeed, she has always hindered me from tiring myself."

"And do you know, mamma," continued Lucy, "he can do much more in the day now than he could before, because we have arranged it rightly."

Harry observed, that they had been obliged to try a great many experiments before they had brought things to this happy conclusion.

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"You see, mamma," said Lucy, "that Harry must have experiments some way or other: and now that he has neither balloons, or workshop, or laboratory, and cannot stir from his sofa, he is reduced to try them on his own mind or on mine."

"And that is very convenient," said Harry, "for we have all we want for the purpose in ourselves. Mother, do not you think it is useful?"

"Very useful, my dear, for by these means you may learn to command your own mind, while, at the same time, you are acquiring some insight into the minds of others: and, by judiciously arranging your occupations, you may not only get more done in the same period, but you may strengthen, quicken, and enlarge all the powers of your understanding."

Harry was now well enough to be brought out into the common sitting-room. His sofa had large castors, which moved so easily, that Lucy, without any help, could roll him from room to room. One evening she was admiring these castors, and Harry, who had not failed to examine their construction, undertook to explain to her on what their excellence depended. He told her that, in common castors, the upright pin round which they turn is so short that it has no support, being only just long enough to rivet through the lower plate of the brass socket; but that, in these castors, the pin is five or six inches long, and tapered to the upper end, which is made to play in a little iron thimble let into the leg of the sofa. "So that you see, Lucy, the long pin is always kept in its place; and as it turns round with very little friction, it allows the wheel to take at once the direction in which the leg is moving."

His father remarked that castors on the same principle were now sold, as a recent invention, by the name of French castors, though a print of a similar contrivance is to be found in a Dutch book on windmills, printed above a hundred years ago. "In this trivial circumstance, Harry, is an example of what I have often observed to you, that the same things are invented in different countries, by people who have no communication with each other; simply because the same wants are felt, and because the same progress has been made

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in knowledge. Indeed, these very castors were invented and used by a friend of mine in this kingdom thirty years ago, and yet I can readily believe that some Frenchman may have again reinvented them still more lately."

"But if your friend invented them first," said Harry, "I think it is wrong that they should be called *French* castors."

"It is not worth while for nations or individuals to dispute about such trifles, my dear boy," said his father, "no persons, who have much invention, are meanly anxious to contest, on every petty occasion, their claims to originality. Their feeling is—Better invent something new than dispute about the past."

Here the conversation was interrupted by the arrival of a lady, who was to drink tea with them. When tea was over, she produced from her workbag a little manuscript book, containing a collection of riddles and charades, which she had brought for Harry's amusement. Lucy liked them, because she found them out quickly. Harry was uncommonly slow and unsuccessful in his attempts; even hints, intended to help him, invariably set him more wrong. He soon came to "pray tell me," and, when told, he could not always understand the explanations; they appeared more difficult than the riddles themselves, especially when both Lucy and the lady were explaining them to him at once, and in different ways. However, he was so good-humoured, and afforded so much diversion by his strange guesses and extraordinary misapprehensions, that their visiter, as she closed her book, declared, that for her part she should have been quite sorry if he had made them out better. Of six or seven special favourites she left copies with Lucy; and, after her departure, Harry begged Lucy to go over these again with him, one by one. If he had ever known, he had by this time forgotten their meaning: so that they were to be guessed by him again, with Lucy's assistance.

"First," said Lucy, "comes a riddle.

> "'You eat me, you drink me, deny it who can;
> I'm sometimes a woman and sometimes a man.'"

"I'm sometimes a woman and sometimes a man," repeated Harry, "and yet you are eaten! Only cannibals eat men and women; and yet this cannot be a can-

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nibal—you may as well tell me at once, Lucy, for I cannot find it out."

"Then it is a *toast*," said Lucy, "you eat a toast, and you drink a toast, do not you? and sometimes a woman is a toast, and sometimes a man—deny it who can."

Harry could not deny it; but he observed it was a play upon the different meanings of the word.

"Yes, and a happy play," said Lucy.

"Happy for you, who found it out," said Harry. "Well, I have now some notion how to set to work. I shall look in the next for a play upon the words. Now for number two," which he read accordingly, with his usual deliberation.

"'I'm Latin, I'm English,
Both one and the other;
But the Latin of one half
Is English for t'other.'"

But neither Latin nor English half could he make out; and when Lucy told him it was a *toad*, it was a considerable time before he could divide toad into *to* and *ad*, or comprehend that *ad* being Latin for *to*, and each word being composed of two letters, the terms of the problem were exactly fulfilled. He acknowledged that it was a shame for him not to have found out this, as his Latin should have helped him; but he sheltered himself under the change of pronunciation in both words. Lucy told him that such little variations of sound must be allowed, or there would be no getting on with riddles.

"Very well. I will make allowance another time, and that will help me, I hope, to make out number three.

"'Inscribed on many a learned page,
In mystic characters and sage,
Long time my first has stood:
And though its golden age be past,
In wooden walls it yet may last,
Till clothed in flesh and blood.

"'My second is a glorious prize,
For all who love their wondering eyes
With curious sights to pamper:
But should they chance this prize to meet,
All improviso in the street,
Oh, how 'twould make them scamper!

"'My third's a sort of wandering throne,
To woman limited alone,

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The salique-law reversing;
But when th' imaginary queen
Prepares to act this novel scene,
Her royal part rehearsing,
O'erturning her presumptuous plan
Up jumps the old usurper man.' "

The lady had said that she believed this riddle was composed by a great statesman, Charles Fox; and Lucy thought this very likely from his statesmanlike allusion to the salique-law; but, be it written by whom it might, she thought it very ingenious.

While she was saying all this, Harry was pondering over the manuscript. Lucy advised him to leave *my first*, and go on to *my second*, because he could easily guess what would make anybody run away if suddenly met in the street, and what would at the same time be a curious sight.

He did make out that this might be a wild beast—a tiger or a lion. Lucy bid him stick to *lion*, and go on to consider what could be a wandering throne for woman —yet a throne which must be enjoyed with the assistance of man. With infinite difficulty Harry at last guessed a sedan chair. But sedan chair and lion would not make any sort of sense: "therefore," said Lucy, "remember '*up jumps*' the old usurper man, that may help you:" but all her helps were vain.

"Oh, tell me!" said he, groaning.

"A *pillion*," said she. He stared and looked blank, till she had repeated it syllabically.

He went back to the pill—"The mystic characters inscribed on many a learned page," being the physician's recipe; and the allusions to the old custom of gilding pills, and to their present wooden receptacles, Harry acknowledged to be somewhat ingenious, but he could not pass over the fault in the spelling: there was an *l* too little, if the lion's share was taken from him to complete the pill. Lucy assured him that he must make some allowance in the spelling, as well as in pronunciation—a kind of *poetical license* must be given.

He was willing to give any license which the laws of riddle-makers allowed: all he asked was to know the laws, that he might guide himself by them.

"But the laws will not guide you much, I am afraid," said Lucy. "Let us go on with the fourth, and we shall see.

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"'My first doth affliction denote,
Which my second was born to endure,
My third is a sure antidote
That affliction to soften and cure.'"

Harry had no time nor opportunity to puzzle or blunder at this; for his father, hearing the words, exclaimed, "That is *woman!* is it not, Lucy?"—and addressing himself to her mother, observed that this charade reminded him of Fontenelle's just and elegant description of the female sex—

"Ce sexe sans lequel le commencement de la vie serait sans secours—le milieu sans plaisir, et la fin sans consolation."

Lucy now read number five—

"'My first conveys the Irish lass
To Ballyshannon fair;
My second oft contains a mass
Of gold and diamonds rare;
My third is worn by those I wot
Who gold and diamonds wear—
The Irish lass she wants it not
At Ballyshannon fair.'"

Harry gave this up; "for," said he, "I know nothing about Irish lasses or Ballyshannon fair; it is quite impossible for me to make this out—so tell it me, Lucy."

"Carmine."

"I wot he does not know that use of it," said his mother.

"I do, mother; and you do not make that use of it," answered he, with a knowing smile, "and I am glad you do not. Do you remember, Lucy, that when I was a very little boy, and going my rounds wishing goodnight, I had to kiss a lady that shall be nameless, who wears quantities of rouge. I did not know that, and unfortunately kissed away half her cheek, and left the oddest mark! I could not help staying to look at it, and she was very angry; but now go on, Lucy, and read your next, which is so short, that I hope it will be easy—

"'The beginning of eternity, the end of time and space,
The beginning of every end, and the end of every place.'"

He looked very serious. It sounded so grand that he fancied it must be something sublime; and much was he provoked when he was told, at last, that what he had been aiming so high to reach was only the letter *e*.

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"But you found it out, Lucy," cried he. "How could you?"

"I cannot tell," said she.

"Oh! do recollect what put it into your head that it was a letter. What was your first thought—how did you go on? *Pray* think, Lucy."

Thus urged to it, Lucy did her best to recollect; and after a pause of deep consideration, and snuffing the candles, which did not want snuffing, she said that at first she thought as Harry did, that it must be something very sublime; "but its being the end of every place convinced me," said she, "that it could not be any thing serious. Then the contradictions—the impossibilities—showed me it could not be any one real thing, except a letter."

"Except a letter! But how did you come to that exception?"

Lucy said she had long ago heard a very pretty enigma upon the letter *h*, beginning—

"'"Twas whispered in heaven, 'twas muttered in hell.'"

She confessed she should never have found it out if she had not heard this.

"That is really a great comfort to my stupidity," said Harry, "for I never heard one of that sort before."

"Now, my dear Harry, let me go on to another, which I must tell you beforehand is of quite a different kind. It is a charade—

"'"My first is a French negative; my second an English characteristic; my whole the essence of all the charades that ever were or ever will be written.'"

"I do believe it is *nonsense*," exclaimed Harry.

"It is, Harry," said Lucy. "How did you find it out?"

"By my English characteristic," said Harry, drawing himself up with a look of mock pride.

"Since you have found this out," said Lucy, "perhaps you can find out the next, and it is the last. Now this is not a charade, it is a conundrum—Burke's famous satirical conundrum.

"'"What is majesty, stripped of its externals?"'

Harry went to work, carefully and rationally considering—what are the externals of a king?

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But Lucy, laughing, told him that all his fine reasonings would only carry him away from the answer.

"Lead me to it, then," said he, "the way you found it out."

"I did not find it out," said Lucy; "but I will tell you how I happened to know it. Once, in my old copy-book, in large hand, there was the word *majesty*; it was divided this way, ma-jest-y, with hyphens between each syllable. Look, Harry, what do you see in the middle?"

"Oh! I see it now," said Harry, "*jest*."

"Yes," said Lucy; "and when I showed my copy to mamma, she, or somebody in the room, repeated this conundrum."

"It is very good," said Harry; "*m* and *y* are the externals, and it is *a jest*; this is very, witty I acknowledge, but I never should have discovered it. It is quite different from any of the others. The worst of it is, that after labouring ever so hard at one riddle, it does not in the least lead to another; the next is always on some different principle."

"Yes, to be sure," said Lucy. "Nobody who knows how to puzzle would give two riddles of the same kind; that would be rather too plain."

"But then, without something to guide me," said Harry, "there is no getting on."

"Not in your regular way," said Lucy. "You cannot go on from one riddle to another, as you do in Euclid, from one proposition to another, and say, by the first proposition, and by the second, and so on."

"That is the very thing I complain of," said Harry.

"Complain! but, my dear Harry, riddles are meant only to divert one."

"But they do not divert me when they *only* puzzle me," said Harry.

"But the object of all riddle-makers," said Lucy, "is to make riddles as puzzling as they possibly can."

"Well, then," said Harry, "since you seem to be in the riddle-makers' secrets, Lucy, pray explain to me the ways they take to puzzle, or rather the rules by which you guess their meaning."

"I would if I could, Harry, but I really have no rules; I can only find out riddles by lucky guesses—happy hits. I do not know how or why, but all at once I see, I feel '*that will do*;' a thought flashes across my

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mind just as quickly as the flame of that candle jumped to mamma's taper, and lighted it as if by magic. Did you see the flame jump?"

"I did," said Harry, "and I wish the riddle-makers' ways were as plain as that. The taper had been just blown out, and there was a little smoke, which still contained some of the inflammable gas from the melted wax; this, you see, made a kind of road for the flame to run along, and, in an instant, the flame seemed to dart upon the taper."

"It is just in that manner," said Lucy, "that our thoughts dart from one idea to another, and sometimes without any connexion between them."

"No, no," said Harry, "we may not perceive any, but I dare say that there always is some sort of connexion between our thoughts, like the train of smoke between the candles."

"But, mamma," said Lucy, "all this time I want to hear *your* riddle very much. The lady interrupted you, and you never told it. Will you give us yours now, mamma?"

"Mine! my dear," said her mother, "It is not mine. It was written by—but I will not tell you by whom. I never like to prejudice you by celebrated names. Judge for yourself."

She repeated to them the following lines—

"'We are spirits all in white,
On a field as black as night;
There we dance, and sport, and play,
Changing every changing day:
Yet with us is wisdom found,
As we move in mystic round.
Mortal, wouldst thou know the grains
That Ceres heaped on Libyan plains,
Or leaves that yellow autumn strews,
Or the stars that Herschel views;
Or find how many drops would drain
The wide-scooped bosom of the main;
Or measure central depths below—
Ask of us, and thou shalt know.
With fairy feet we compass round
The pyramid's capacious mound,
Or step by step ambitious climb
The cloud-capped mountain's height sublime.
Riches though we do not use,
'Tis ours to gain, and ours to lose.
From Araby the blest we came,
In every land our tongue's the same;

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And if our number you require,
Go count the bright Aonian choir.
Wouldst thou cast a spell to find
The track of light, the speed of wind;
Or when the snail, with creeping pace,
Shall the swelling globe embrace;
Mortal, ours the powerful spell—
Ask of us, for we can tell.'"

"Beautiful!" cried Lucy.

"Yes; beautiful poetry at least," said Harry, "what ever else it is. Mother, will you repeat it once more, for I quite forgot to think of finding it out."

After it had been repeated, Lucy had several of the lines by heart, and Harry had all the ideas. Lucy made a variety of good guesses; but, wonderful to tell! Harry found it out first. He fixed upon one positive assertion—

"From Araby the blest we came."

Here was a clear fact; by the test of which he tried all his own suppositions, and all Lucy's guesses, as fast as they occurred.

"In every clime our tongue's the same," repeated Lucy; "that may be the alphabet."

"That did not come from Araby the blest—it came from Phœnicia, you know, my father told us," said Harry.

"Hieroglyphics, then," said Lucy. "They are in every tongue the same. They will *do* for what is said about the pyramids too."

"But hieroglyphics came from Egypt, not Arabia," said Harry.

He had thought of a telescope, and a barometer, and a pedometer, one after another, as he heard of numbering "the stars," and of measuring the height of the "mountains," or the breadth of the "pyramids." But none of these things came from "Araby the blest."

Lucy, meantime, had flown off, as she was bid, to the muses.

"If our number you require,
Go count the bright Aonian choir.'

"Their number must be nine, Harry," said she.

"Then I know what they are," cried Harry; "the nine Arabic figures. We have it, mother!"

"Yes, they come from Araby the blest; and they can number the stars, and measure the earth. They do all

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that is required. Harry is right, is not he, mother?" cried Lucy. "I am sure he is, by your smile."

Her mother made no answer, but repeated—

"'We are spirits all in white,
On a field as black as night,
There we dance, and sport, and play,
Changing every changing day.'"

"Chalk figures on a black board," said Harry.

"Or figures on a slate," said Lucy; "they are white on a field of black, and they change every day on my slate, I am sure."

"Now you have it," said their mother, "and good-night. It is very late; we must roll Harry back again."

"One moment, mamma," said Lucy. "Before we go, will you tell us who wrote those lines?"

"The same person who wrote the hymns which you learned by heart, Lucy. The same person, Harry, who wrote your favourite 'Perseverance against Fortune,' and many other things, in 'Evenings at Home,' which you like so much."

"Mrs. Barbauld, mamma! The same person who wrote the beautiful essay* you read in that book we saw at Digby Castle; at the end of which was written, in Sir Rupert's own hand—

"'Admirable morality, in most elegant and classical language. I wish Mrs. Barbauld had written more.'"

"PAPA," said Lucy, "I wish you would be so good as to give Harry and me one of your old sort of puzzles."

"My old sort of puzzles, my dear! What do you mean?"

"Such questions, I mean, as you used to ask us sometimes when we were sitting round the fire last winter. You may remember, papa, one in particular which I found out—it was Sancho Panza's judgment, when he was governor of the island, about the old man and the ten golden crowns which were hid in the hollow staff. Can you give us some other questions like that, papa?"

"Pray do, father," said Harry; "or, if you have none

* "Against inconsistency in our expectations," in Miscellaneous Pieces, by J. Aikin, M. D., and Anna Lætitia Barbauld.

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of those ready, some question like Hiero's crown, or the kite and Pompey's pillar."

"Only whatever it is, pray, papa," added Lucy, "let there be along with the question some little story."

"But, my dear children," said their father, "I am not a bag of stories and questions, as you seem to think me, into which you can put your hand and pull one out whenever you please. You must give me a few minutes for recollection. By the time you have finished that game of chess, perhaps I shall have thought of one."

In a few minutes Lucy warned her father that she should very soon be beaten.

"There!—checkmate—it is all over with me."

"But you made no battle," said Harry; "you were not worth beating—you were in such a hurry to get to the story."

"Maybe so," said Lucy. "Now papa is going to begin, and we may roll your sofa up close to the tea-table." This being done, their father began as follows:—

"Three Arab brethren, of a noble family, were travelling together for improvement. It happened, one day, that their road lay across a great plain of sand, where there was little else to be seen except a few tufts of grass. Towards the close of the day they met a camel-driver, who asked them if they had seen, and could give him any tidings of, a camel that he had lost.

"'Was not your camel blind of an eye?' said the elder brother. 'Yes,' said the camel-driver. 'It had a tooth out before?' said the second brother. 'And it was lame?' said the third. 'Very true,' replied the man; 'pray tell me which way it went?' 'Did it not carry,' asked the Arabians, 'a vessel of oil and a vessel of honey?' 'It did, indeed,' answered the camel-driver; 'pray tell me where you met it?' 'Met it! We never saw your camel,' they replied.

"The enraged camel-driver could not believe this; he charged them with having stolen his camel, and brought them before the prince. From their manners, and the wisdom of their answers to the questions which the prince asked them upon other subjects, he was persuaded that they were above committing such a theft. He set them at liberty; but requested, that before they departed, they would inform him how they could possibly have hit upon so many circumstances that were true, without ever having seen the camel.

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"The brothers could not refuse to comply with so just a request; and after thanking him for his clemency and kindness, the eldest spoke thus:—

"'We are not magicians, nor have we ever seen the man's camel; all we know of him was discovered by the use of our senses and our reason. I judged that he was blind of an eye, because—'

"Now, Harry and Lucy, explain, if you can, the methods by which the three brothers guessed that the camel was blind of an eye, and lame of a leg, that he had lost a front tooth, and was laden with a vessel of oil, and another of honey."

Harry asked whether there was any thing in the camel-driver himself by which they judged? No, there was nothing in or about the camel-driver that gave any assistance.

"Papa, I wish you would help us a very little," said Lucy.

"Do you not recollect telling me this morning that you knew my horse had been at the door, though you did not see it?"

"By the tracks—oh! yes, papa," cried Lucy. "No other horse ever comes up that gravel-path; and as the Arabians were travelling on a sandy desert, probably they had seen no other tracks but of that one camel. But how did they know that he was lame of one leg?"

"The camel would put the lame foot down more cautiously than the others," said Harry, "and the trace of that footstep would be always less deep than those of the other three."

The blind eye was a more difficult question. Lucy thought the camel might have swerved more to one side than to the other; or perhaps the footsteps might show places where he had started out of the path, and always on the same side. A few other guesses were made, but nothing more was found out this evening.

The next morning Lucy said she had thought of the camel and the three brothers the moment she wakened; but the more she thought, the more she was puzzled. She was just going to add, "Papa, I give it up," but Harry advised her to have patience a little longer. It happened, at this instant, that her mother was helping her to some honey; a drop fell on the table-cloth, and a bee which was flying about the room settled upon the sweet spot.

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Lucy started with delight on observing this, and exclaimed, "Harry, Harry, I have found it out: the vessel of honey leaked—the drops fell on the sand—and the brother observed the little collections of bees, or insects, which had settled on them. I am right, for papa smiles. As to the oil, some of that might have been spilled by the jolting of the lame camel. The loss of the tooth is all that now remains, so I leave that to you, Harry. You look as if you had a bright thought."

"I remember," said Harry, "my father, in the beginning of the story, told us that there were a few tufts of grass on the road: the hungry camel—for no doubt he was hungry in the desert—might have bitten these, and one of the sharp-eyed brothers might have seen, that in each bite a few blades of grass stood up higher than the rest, because of the gap left by the want of the tooth."

"Now we have it all right," said Lucy; "and we were very little helped, considering—"

"But I wish we had not been helped at all," said Harry. "I wonder whether anybody of our age ever found out these questions without any help?"

His father said that the questions had perhaps never been asked before; certainly not in the same manner in which he had put them, because he had altered them for the present purpose. In the story from which they were taken, some of the questions would have been too difficult for Harry and Lucy. But they were now ambitious to try these, and their father was willing to comply with their wish; warning them, however, of the improbability of success.

"In the original story," said he, "instead of a camel it was a horse; and one of the brothers discovered that the horse had silver shoes, and a golden bit; and he also told the exact value or fineness of the silver of the shoes, and of the gold of the bit. How did he know all this?"

"I cannot conceive," said Lucy. "Yet, perhaps, if you give us time, papa, some accident might put us in the right road. Some lucky hit, like the falling of the honey on the table-cloth, and the bee settling on it, might lead us to invent the thing, whatever it is."

"No, Lucy," said her father, "no lucky hit could

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possibly help you to this; you want some particular facts, without which you cannot answer the question."

"Then cannot you be so good as to tell us those particular facts?" said Harry.

"No, my dear," answered his father, "they depend on the art of *assaying* metals; that is, of ascertaining their fineness and value: so I may as well tell you at once, that the wise brothers had observed the marks which the horse's shoes had left on some stones in the path; they had also observed the marks which the golden bit had left on the stone trough, at a well, where the horse had rubbed it in drinking. The skilful eye of one of the brothers had been able to judge of the fineness and value of the golden bit and silver shoes by the different colours of these marks."

Harry pondered for a few moments, and then observed, that the difficulty of explaining these puzzling questions sometimes arises from our not having the particular sort of knowledge that is necessary, and sometimes from our not being able to recollect that which we really have: "For instance," said he, "we knew all that was necessary for answering the first four questions: all the difficulty was just to recollect, and apply our knowledge to the purpose."

"You can hardly call it *knowledge*," said Lucy, "if you mean such little observations as those about the tracks of a horse, or the bees settling on the honey—everybody knows that bees eat honey."

"And yet it was for want of our recollecting those little things, which everybody knows, that we were puzzled so long," said Harry.

"Well, then, Harry," said Lucy, "if a fairy were to give you your choice this minute—all the knowledge from all the books in the world, without giving you the power of recollecting it—or the power of recollecting well whatever knowledge you could acquire for yourself—which would you choose?"

"To be sure I would choose the power of recollecting well whatever I could get for myself," said Harry; "for of what use would it be to me to have all the knowledge in all the books that ever were written, if your fairy forbids my ever recollecting any of it when I want it?"

"But I did not say that there should be any forbid-

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ding in the case; you may recollect the knowledge she gives you just as you please or can."

"*Please* or *can*," repeated Harry; "there is a great difference between them. To be sure, I should please to recollect, if I could, but often I cannot; and it would be still more difficult if I were to have that immensity of knowledge which your fairy offers me. I should never be able to find any one thing I wanted in such a mass: I should be my whole life getting it into any tolerable order."

"Ah! then you would feel the use of what you would not allow when I was sorting my shells—classification, Harry."

"No single head could contain all the knowledge of all men's heads put together," said Harry, "whether classified or not."

"But suppose my fairy has the power to make yours contain it all," said Lucy, "would you have it? Yes or no, she is waiting for an answer."

"No, is my answer," said Harry. "No, thank you, Mrs. Fairy, I would rather not have that load of learning; but for the power of recollecting quickly, I should be very much obliged to you indeed. I feel every day how much I want it, and I cannot get it for myself; but knowledge I can work for, and get for myself. Nature, or one of your good fairies, must give memory. I wish one would appear this minute, and offer it to me."

"And I," said Lucy, "would be equally obliged to her for knowledge. But, mamma, is it not curious that Harry would refuse the offer of the knowledge, and I should be for accepting it? What would you do, mamma, and what would you, papa?"

Her mother agreed with Lucy, that she would accept the knowledge, and run her chance for recollecting what she might want. Her father joined with Harry in dreading the overwhelming quantity of learning, and in preferring the gift of recollection. It should be observed, that his father, like Harry, had not a remarkably good memory; but that both Lucy and her mother had quick recollective powers: each chose according to their sense of their own deficiencies, and each argued according to their own view of the matter. Long, but not loud, the question was debated on each side, even till the last cup of tea lingered, and grew cold.

For some time Harry and his father maintained their

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argument on the ground that it was best to accept from the fairy that which cannot be obtained by one's own exertions. But this stronghold was shaken by the attacks of the opposite party; and Lucy, or rather her mother, doubted the truth of the principle, that the powers of memory cannot be improved. At length they all rose from the breakfast-table, pretty much, but not quite, of the same opinions with which they began. It was, however, settled, that no hasty answer should be given to the fairy, till the matter had been reconsidered, and that in the meantime the business of the day must proceed.

After Harry's business of the day was done, his pleasure was to make a model of a machine, which he had been inventing, with some cards that Lucy had brought him. She sat at work beside him, but her work was often put down while they talked.

"There was something mentioned yesterday evening," said Lucy, "about a kite and Pompey's pillar. I do not know what you meant about the kite, but I do know a story about an obelisk."

"I will tell you all I know," said Harry, "about the pillar and the kite, and then you can tell me your story:—

"Some English sailors laid a wager, that they would drink a bowl of punch on the summit of Pompey's pillar: now, that pillar is almost a hundred feet high, and it is quite smooth, so that there was no way of climbing to the top, even for sailors, who are such experienced climbers. The question my father asked me was, how did they get up?"

"I cannot conceive how a kite could help them," said Lucy.

"You shall see," said Harry. "They flew their kite exactly over the pillar, so that when it came down on the opposite side, the string lay across the top of the capital. By means of the string they pulled a small rope over, and by this a larger one, that was able to bear the weight of a man: a pulley was then fastened to the end of the large rope, and drawn close up to the upper edge of the capital; and then, you know, Lucy, they could easily hoist each other up. They did more, for they hoisted the English flag on the top of Mr. Pompey's pillar, and they drank their bowl of punch there, and they won their wager."

"And they deserved it for their ingenuity," said Lucy.

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"But my story is quite different:—One evening, after a wet day, as we were standing at the window, I observed that the ropes were very tight between the posts in the fence—they did not hang down nearly so low as usual. Papa asked me if I could tell the reason; and I said that I supposed the wet had swelled the ropes, and shortened them: It was about our hygrometer time, Harry, so it was easy for me to think of this. Then papa recollected the obelisk story. But first I should warn you, as he did me, that probably it is not true."

"Well, well, let me hear it," said Harry, laughing, "whether it be true or false."

"Then you must know, that there is at Rome a famous obelisk, of Egyptian granite, and of prodigious weight. After it had been brought from Egypt to Rome, it lay on the ground a length of time, no one having ventured to erect it: at last a great architect and mechanic was employed for this purpose by the Pope. Great preparations were made, for fear of injuring the obelisk, if it should fall; but my father did not describe the machinery."

"I am sorry for it," said Harry.

"I could not have remembered it for you if he had. Whatever the machinery might have been, the obelisk was at last raised, so as to be very nearly, but not quite, upright. The men pulled and pulled at the ropes—but oh! terrible disappointment, it was found that they could not be tightened any more, by any means that had been provided, or that the architect could suggest. There the obelisk hung—the workmen at a stand—the spectators all silent, and the architect in despair! I forgot to tell you, Harry, that the Pope had ordered, under pain of death, that nobody should speak during the operation: but at the instant when none knew what to do, an English sailor from the crowd called out with a loud voice, '*Wet the ropes.*' Water was thrown over them; they soon shortened just sufficiently to raise the obelisk to its right place, and it stood perfectly perpendicular."

Harry thought it was a pretty story, whether true or not; he could scarcely think, he said, that the shrinking of the ropes would have been sufficient, nor could he imagine how the people could get up to wet them all. It however reminded him of a circumstance which he had heard his father relate to Sir Rupert Digby.

"The walls of some great building in Paris were be-

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ginning to give way under the weight of the roof. They were pressed outwards, and were no longer exactly perpendicular. To squeeze them in, and make them again upright, was the thing to be done: for this purpose several strong iron bars were laid across the building from wall to wall, about half way up, and their ends were left projecting on the outside: fires were then lighted underneath these iron bars, till they were nearly red-hot, which caused them to expand; and while in their highest state of expansion, large thick plates of iron, with holes in their centres, were slipped on the ends of the bars, close up against the outside of the walls, and secured there as firmly as possible by great iron nuts, which screwed on after them. The bars were then allowed to cool, and in cooling they contracted, and consequently the iron plates and the walls with them were drawn a little closer together. The operation was then repeated with another set of bars, and so on alternately with the two sets, till the walls were gradually restored to their perpendicularity."

Lucy thought this exceedingly ingenious. She observed, too, that Harry had recollected it at the right moment, though he complained so much of his memory.

After this a long silence ensued.

"What can you have been thinking of all this time?" said Lucy. "Only of that model you are making?"

"I have been thinking of a great many other things," said Harry. "Among others, of some of the questions my father asked us last winter. Do you remember one about a Persian painter? I cannot recollect exactly how it was."

"Yes, I remember it," said Lucy. "It was a very simple thing, and yet I could not answer it. An Indian prince, a conqueror, Kouli Khan, or Nadir Shah, or Tamerlane, or Bajazet, or some of those people, found among his prisoners, after some great victory, a Persian painter. Now the conquering prince, whoever he was, was not remarkably handsome; he was blind of an eye, lame of a leg, and one of his arms was shorter than the other: but this man pleased the prince so much, by drawing his portrait in an attitude which concealed all his personal defects, that he gave him his liberty without ransom, and of course half a dozen purses of gold besides. He painted him drawing a bow, kneeling on the

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lame knee, shutting the blind eye, and pulling back the lame arm. This attitude was the question."

"Well done of the painter!" said Harry; "but not well done of Lucy, for this, I think, was an easy question, particularly for you, who draw, and are used to think of attitudes for figures. How happened it that you could not find it out at the time you wanted?"

"Because I was thinking of something else."

"What! when papa asked you the question?"

"Yes," said Lucy; "it put me in mind of something else at first setting out, and off went my head to that other thing, and I could not get it back again."

"And pray what did it go off to?" said Harry.

"Oh! to nonsense, my dear," said Lucy. "First, when my father spoke of an Indian prince and a great conqueror, I began to think who it could be that was lame and blind, and such a frightful figure. Then I thought of Tamerlane, and then of the iron cage in which he was shut up by Bajazet; and then off went my thoughts still further to a print of Garrick, in the character of Bajazet; then came his great turban before my eyes, and the little cock's feather in front, which I thought looked like the feather of spun glass, that you gave me ages ago; this put me in mind of mamma's saying it was dangerous to wear that spun glass, because the little bits might fall into our eyes. My thoughts then jumped off to the glasshouse. In short, when papa asked me for the answer, I started—my head was a hundred miles off at least."

"I have often done the same thing, and felt the same way," said Harry, "about questions my father has asked us. Another reason for my not finding out the right answer is, that some fixed notion has taken possession of my wise head beforehand, and of which I cannot get rid. Did you ever feel this, Lucy?"

"Oh yes," said Lucy; "and I recollect having often been a provokingly long time in answering something that was quite easy, merely because I had made sure that it was difficult. For instance, that easiest of questions, which you asked me once—a herring and a half for three halfpence, how many for eleven pence?—I fancied, because it was so gravely asked, there must be something difficult in it."

Harry smiled.

"And you, Harry, yourself," continued Lucy, "may

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recollect you were full as long a time as I was about the herrings, in finding how to write fifty-six with four fives?"

"Yes," said Harry, "because I had taken it into my head that it must be written in Roman figures, and this prejudice prevented me from thinking of the right way with common figures and fractions, in this manner, 55§. But now," continued Harry, "let me, before I forget it, give you another, a better or a worse instance of the same sort of prejudice, in a real good question of my father's. Some time ago, the day my father took me into the dock-yard, he showed me a ship lying in what is called a dock. The keel was to be repaired, and for this purpose it was necessary to raise up the ship, so that the workmen might get underneath. The question my father asked me was, 'How the vessel could be raised?' I was an hour puzzling about it, because I was prepossessed with a particular notion about tackles and ropes, with which I had seen sailors raising and lowering a boat, and I thought the ship could be raised only in that sort of way. My father showed me the absurdity of that idea, and then I thought of levers, but I could get no further. I went on thinking of levers, and pulleys, and windlasses, but never of the easy way that was before my eyes—to let in the water from the outside of the dock. The water, you know, would gradually float the vessel, and raise it up to the proper height, where it could be propped up, and the water let out again next tide."

"How simple!" said Lucy. "Just as our boat in the lock was raised. I wonder you did not think of that. But, Harry, yesterday I heard my father talking to you of some different way of raising a ship when it wanted to be repaired. I came into the room in the middle of what you were saying. I wish you would explain it if you can."

"I will try," said Harry. "You must first of all know, that when a vessel is floated into a dock to be repaired, *she* is allowed to settle down with her keel upon thick wooden blocks, along the middle of the dock: and then I must tell you, Lucy, that formerly when she was to be raised up, for the people to get under the keel, two or three hundred *shores*, or props of timber, were placed all under her bottom, nearly upright; wedges were then just pointed under the lower

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end of each of these shores, and all the workmen from every part of the dock-yard being summoned with their *mauls*, or huge hammers, and stationed one or two to each shore, the wedges were all struck at the same instant by word of command. A few blows from all the mauls were sufficient just to raise the ship from off the blocks, which were then taken away, and the ship was left hanging in the air, supported by the shores.

"This was a very troublesome business, and wasted a great deal of time and labour; but by the new way all this difficulty is avoided. The blocks on which the keel is to lie are not solid lumps of wood; they are composed of three pieces, two of which are *wedges*, and when these are knocked out, the centre piece of the block falls. The ship is floated into the dock as usual, and when the water subsides, the keel rests on the new-fashioned blocks: the forest of shores are then firmly placed under all parts of the ship's bottom, in the same way as I described to you before, but without any wedges. Now, Lucy, comes the beautiful contrivance—two or three men only are sufficient to do the rest: they give a few knocks on the sides of the wedges, of which the blocks are composed—out they fly—the blocks sink, and the ship hangs on the shores. I do hope you understand this, Lucy."

"Yes, I am sure I do," said Lucy; "but it is such a pretty contrivance, that I should like very much to see it done. Suppose you make an experiment with your little boat in our canal."

"So I will, with pleasure, when I am well," said Harry. "It is very agreeable to explain these things to you now, Lucy," added he, "because you do not think you know it all before I can get my words or thoughts out."

"It is a great while, Harry," said Lucy, "since you called me Mrs. Quick-quick."

"It is a great while," said Harry, looking a little ashamed, "and I am glad of it. I think you are quite cured of that, Lucy," added he.

"Are you sure that I am quite cured?"

"Yes, perfectly cured," he twice repeated, with emphasis; "and even if you had not cured yourself, I should not be so impatient now, I hope, as I was then I should be very ungrateful if I were. You, who are so kind and good-natured to me! thinking of nothing from

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morning till night but what you can do to make me happy."

"Then if you are happy, so am I," said Lucy. "But, Harry, I must tell you that you are a little mistaken—I am often in too great a hurry still; though you do not see it, because I have learned not to be in such haste to speak; but in thinking I still often make sad mistakes, and really am prevented from finding things out by being too quick."

"Give me an instance," said Harry.

"I will," said Lucy, "about a thing that happened very lately. When we were walking in the garden, papa and I stopped to look at the sundial, which put him in mind of a story. He told me that there was a statue, I forget where: on the statue was this inscription—'Whoever watches my head, and opens it on a certain day of the year, and at a certain hour of that day, will, if the sun shines, find a treasure.' The day and hour were mentioned. On the appointed day, and at the appointed hour, some travellers, who had read the inscription, assembled round the statue. The sun did shine: but what was to be done? Some were for pulling the statue down to get at its head, for it was of gigantic height—others proposed clambering up, to break open the head. They did scramble up, and they did open the head, but there was nothing in it. The people were very much disappointed, and they all went away, one after another, grumbling at the statue and the inscription, which had made such fools of them. One, however, wiser than the rest, stayed behind, and understanding the inscription rightly, followed its directions, and found the treasure;—and how did he find it? was the question papa asked me, and now I ask it you, Harry."

Harry said he had met with the story somewhere before. "The man observed where the shadow of the statue's head fell on the plain at the appointed hour, and there he opened the ground, just under the shadow of the head, and found the promised treasure. Was not that the answer?"

"Exactly," said Lucy; "but I could not find it out, and all because I was too quick."

"How did your quickness hinder you?" said Harry.

"I recollected another statue of which you had told me, Harry; and as soon as I heard the words *statue*,

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and a *certain hour*, and the *sun shining*, I galloped off to your statue of Memnon, which, at a certain hour in the day, when the sun shone on it, used to send forth certain musical sounds; for the music was made, as you told me, by the air, when heated, rushing out of holes in some pipes which were in Memnon's lyre. Of all this I was thinking, and contriving how I could make sense of it, for I imagined that the statue's head must be managed in the same way. Then another strange thought came into my head, that the music, which I had settled this statue should play, should be like our play of *magical music*, and that it should sound loudly or softly, as the travellers went nearer or further from the right place, and so guide them to it."

"Very ingenious, at least," said Harry.

"But it was all wrong," said Lucy. "But I see mamma before the door with her bonnet on," cried Lucy, starting up and looking out of the window. "I dare say she is going to walk to Digby Castle, and I should like to go with her, if you can spare me, Harry."

"Oh! yes, and thank you for the time you have stayed," said Harry. "Only, before you go, give me a few large pins—six stout pins. Thank you! Now away with you, my dear. I shall be quite happy till you come back again."

When Lucy returned from her walk, she brought a basket, filled with flowers, from the hothouse at Digby Castle. After holding them for half a minute to Harry to admire and smell, she began to put them into a flower-pot, telling him that she had something solid for him at the bottom of her basket, under the flowers.

"I know what it is," said Harry; "it is a book."

Lucy looked immediately at the sides of her basket, to see if Harry could have spied the book through the openings of the wicker-work, but that was impossible. "You only guessed, I suppose, Harry, that it was most likely that I should bring you a book."

Harry said that he did not guess, but that he was quite sure of it. On which Lucy went to his sofa, and looked from thence out of the window.

"But you could not, while sitting here," said she, "see the mountain path down which we came."

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"I did see you," said Harry, "walking down that path with a book in your hand, and when you reached the great thornbush, I saw mamma sit down."

"Then, Harry, you must have got off your sofa to look out of the window," cried Lucy. "Oh fy! Harry, you were not to quit your sofa without leave from the surgeon."

"I never stirred from the sofa," said Harry.

"Oh, I have it now," cried Lucy—"the mirror out of the camera-obscura."

"You are right," said Harry. "Now tell me what is the book you were looking into, and where is it?"

"It is here in my basket," said Lucy, "but you shall not know its name yet. I must first tell you, that in our walk to Digby Castle I was giving mamma an account of what you and I had just been talking about. She said nothing, or very little—only smiled now and then. When we reached the castle, she went to the library to look for some books; and among others she took down this, which she put into my hand, telling me that perhaps I should find some things in it like what you and I had been saying to each other. The author was a most celebrated philosopher. I will not tell you his name, Harry; but only think of his having observed, in his own mind, the very same sort of faults that we find in ours. Look at the heads of these pages—'*Wandering attention.*' That is my complaint. Then comes—'*Words—abuse of;*' that means something like what you hate in riddles, Harry; play upon words, or using words inaccurately, which, he says, is a very great fault in reasoning."

"I like him for that," said Harry, "whoever he is."

"Then," said Lucy, "here comes '*Prejudice,*' and here is '*Transferring of Thoughts;*' by which he means *not* transferring, the not being able to turn them from one subject to another easily. That, you know, Harry, is what you call your great *hinderance.* Look, here it is."

"My picture at full length," said Harry. "Let me look at it."

"But it is not like you *now,*" said Lucy, holding the book fast.

"Let me see," said Harry; "or, if you will not let me see, let me hear."

Lucy read aloud—

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"'Men thus possessed in company (that is, with their own favourite thoughts, said Lucy) are as if they lay under the power of enchantment. They see not what passes before their eyes—hear not the audible discourse of the company.'"

"Like me, I acknowledge, on my disagreeable day in the carriage," said Harry, "when I did not hear what any of you were saying."

"Oh! listen to this," continued Lucy.

"'And when by any strong application these absent people are roused a little, they are like men brought to themselves from some remote region; whereas, in truth, they come no farther than from their secret cabinet within, where they have been wholly taken up with the puppet which was for that time appointed for their entertainment. The shame that such *dumps* cause to well-bred people, when it carries them away from the company where they should bear a part in the conversation, is a sufficient proof that it is a fault in the conduct of their understanding.'"

Lucy repeated her opinion that this was not like Harry *now*, with a very strong consolatory emphasis on that word.

"But tell me," said Harry, "what were you and my mother doing when I saw you at the thornbush? you and she opened and shut the book several times. What were you about?"

"Looking at different parts of this book," Lucy replied. "Mamma informed me, that it will tell us, not our fortunes, but our faults; therefore, whoever does not like to know them must not open it."

"I am not such a coward," said Harry, "nor such a fool. I will open it directly."

"Then I must hold it for you," said Lucy, "as mamma did for me."

She held it between her hands, and bade him put his finger into the leaves, and take his chance.

Harry opened, and read at the head of the page, "Presumption."

"That is no fault of yours, luckily for you," said Lucy. "Let me try. Will you shut, and I will open."

She opened at "Despondency."

"No fault of mine," said Lucy. "This is not a good hit either. But I must tell you, Harry, how luckily the book opened once for me when mamma held it. It opened at '*Similes.*' Pray read what is said about those who are always finding similes. Begin here:"

"'An aptness to jumble things together wherein any likeness can be found, is a fault in the understanding. Near akin to this is letting

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the mind, upon the suggestion of any new notion, run immediately after similes to make it the clearer to itself.'"

"Then," interrupted Lucy, "he goes on to prove that this is wrong; and he says that these simile-lovers are apt to mistake what is prettily said for sound knowledge, because they are content with their similes, which are never exact. That is what long ago, Harry, you used to complain of in my similes. Do you remember?"

"I should like to read that book," said Harry.

"No, my dear Harry, I don't think you would; it is in such oldfashioned, tedious language, it would tire you with its *whereas's*, and *wherefores*, and parentheses, and roundabout sentences. One thing, however, will please you," said Lucy, "a grandissimo panegyric that mamma showed me on mathematics;* and in the same page he says something about the way in which young scholars think and feel when first they begin mathematics. You can say whether he is right or wrong there."

She read the passage† to him, and he said that all about the young scholar was true, as far as he could judge. "Now, Lucy, tell me the name of the book and the author."

"'*Locke on the Conduct of the Understanding*'—the great Locke!" said Lucy. "Now, Harry, is not it curious that we should have thought and said to each other some of the same things which this grand philosopher says in this book? But, Harry, it does not seem to surprise you. Do not you think it extraordinary?"

"N—o," said Harry. "It would have been surprising, indeed, if we had thought the same as the great Locke about any thing else. But who could know so well as ourselves what passes in our own minds? and

* "I have mentioned mathematics as a way to settle in the mind a habit of reasoning closely and in train; not that I think it necessary that all men should be mathematicians, but that having got the way of reasoning which that study necessarily brings the mind to, they might be able to transfer it to other parts of knowledge."

† "He that has to do with young scholars, especially in mathematics, may perceive how their minds open by degrees, and how it is exercise alone that opens them. Sometimes they will stick a long time at a part of a demonstration, not for want of will and application, but really for want of perceiving the connexion of two ideas, that to men, whose understanding is more exercised, is as visible as any thing can be."

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there must be some likeness between all people's minds. Pray, does this book tell us how to *cure* these faults?"

"Mamma says," replied Lucy, "that when I am old enough to study it attentively, I shall find a great deal of excellent advice in it; but I have only read the one page about my old disease of wandering thoughts."

"Will you leave it on the sofa," said Harry; "if it tires me, I need not read it."

"But, Harry," said Lucy, "before I go, I wish you would tell me why you were so anxious about those riddles and puzzles? why you made me recollect for you, step by step, how I found some out, and how I failed in others?"

"Because I thought it might teach me to invent," said Harry.

"My dear Harry! to invent riddles and puzzles, do you mean?"

"No, I do not care about them," said Harry; "but I thought, that if I discovered what was that puzzled me in the riddles, I could, by the rule of contraries, prevent myself from being puzzled in other things."

"Well, could you make out any general rules?" said Lucy.

"Yes, I think I have made out one," said Harry. "You know that we found out the 'figures on a slate' by sticking to 'Araby the blest;' therefore in all cases we should guide ourselves by some one thing which is certain, and thus go on from the known to the unknown."

"Yes, and *kill off* the wrong guesses that do not agree with that one fact," said Lucy. "Like the play of the four-and-twenty questions, where you find out what a person is thinking of, by asking, Is it animal? or vegetable? or mineral? and so on; and each answer telling what it is not, brings you nearer to what it is, till at last you come quite to the right thing. So far so good for riddles, and more good than I expected; and as for the story-questions, it appears that the difficulty is less often in the question than in ourselves, in our own minds."

One fine sunshiny day, Lucy coming in after working in the garden, opened the door of the drawing-room, where Harry was now daily stationed on his rolling sofa, and perceived that all the window-shutters were shut.

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"My dear Harry, what is the matter!" cried she.

"Nothing is the matter; but take care, take care!" cried Harry, "do not knock down my little table."

"I cannot see your little table," said Lucy; "let me open a bit of this shutter."

"Not for your life!" cried Harry. "My father has just fixed it all for me. Only walk straight to my sofa, and shut the door after you; my father is going to show me some of Sir Isaac Newton's famous experiments on light and colours: and, my dear Lucy, your setting me in pursuit of the green and blue shadows is the cause of all this happiness to me. My father came in, and found me at that book. He talked to me about it, and found out what I did understand and what I did not, and then he said that all my pains should not be wasted. He will give us half an hour a day as long as I am confined to the sofa, to show us these experiments, and perhaps he will tell us something about the cause of those colours in soap-bubbles, about which we have been so curious."*

Lucy now found that she had been mistaken in supposing that Harry could not pursue any entertaining experiments while out of the reach of laboratory and workshop; and her father assured her, that many most ingenious experiments have been tried by the greatest philosophers with the simplest apparatus. He recollected having seen a letter from Sir Humphrey Davy, agreeing with Priestley in opinion, that no man, who waits to try experiments till he has every convenience prepared, will ever make any discoveries in chymistry.

"But I hope," said Lucy, "that our friend Sir Rupert Digby's having such a nice laboratory and workshop does not prevent him from being a philosopher."

"Not at all," said her father; "that does not follow. What I tell you may be a comfort to those who have not these advantages, and may prevent them from conceiving that they are essential to success. A great deal may be done without them, but a man of fortune cannot employ his wealth better than by preparing such conveniences for learning and science. I would say here the reverse of what a great moralist has said upon another occasion: Dr. Johnson observes, that it is often

* No account is given of these experiments, because they can be found in Scientific Dialogues, and various other publications.

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misery to want what it is not happiness to possess. I should say of the workshop and the laboratory, It is often happiness to have what it is not misery to want."

In repeating these experiments of Sir Isaac Newton's, his father told Harry that he had a further object than his mere acquisition of the facts; he wished his son early in life to observe with what care and exactness this great philosopher had conducted his experiments; how cautious he was to make himself certain, by repeated trials, of the causes of the effects produced; never venturing assertions, nor trusting to his own suppositions, till they had been verified by repeated trials; never hazarding general conclusions from a few facts, and, what is perhaps the most difficult of all, never taking any thing for granted.

Lucy, having expressed some surprise at her father's saying that this was the most difficult, he smiled, and said, "Perhaps the day will not pass without your giving me some little opportunity of proving it to you by your own practice."

A little while afterward, Lucy, who was making some pasteboard model for Harry, went into a closet, opening into the drawing-room, to look for a saucerful of paste which she had left there; but the mice had eaten it, and she was forced to wait while a fresh supply was preparing. During this interval many were her invectives against the whole race of mice, and many her resolves to put the saucer this night where none could reach it. She stood with an old newspaper ready spread on the table for pasting; suddenly a paragraph in it caught her eye, and she exclaimed, "Now, mice, I defy you, and all your nibblings. Mamma, look here, I have found an *infallible* receipt for preserving paste,' or any thing, 'against the depredations of mice.' The easiest way in the world, mamma—only to surround it with sprigs of mint. Pray, mamma, read this."

"I read it three months ago, my dear," said her mother, "and I tried it. I surrounded a plate of paste with sprigs of mint, and next morning I found much of the paste gone, and the mint scattered. I repeated the experiment with different things, and always with equal want of success."

"There is an end then," said Lucy, "of the *infallible* preservative."

"I do not know much about plants," said Harry, "but

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I believe there are different sorts of mint; they may not all have the same properties. Perhaps the mint you used, mother, might not be the kind recommended in the receipt."

His father observed that Harry's was a good suggestion; that every circumstance should be the same in repeating an experiment, otherwise it is not fairly tried, and the conclusion cannot be depended upon.

Lucy expressed a wish to try the experiment for herself, if her mamma would not be offended; but Harry assured her that nobody ever thinks of being offended about trying experiments.

"Then I will run out to the garden, and gather plenty of mint," said Lucy.

Away she ran; and at night she fenced her paste-plate round with a double row of different kinds of mint: thus intrenched, she placed it on the same shelf, in the same closet, and shut the door. In the morning her father and mother were at the opening of the closet. To her agreeable surprise she found that the paste had not been touched; there were no marks in it of little feet or nibbling teeth, and the sprigs of mint remained exactly in the same order in which she had arranged them.

"Well! mamma, what do you think now?" said Lucy. "Perhaps the receipt-writer may not be mistaken after all. Perhaps, mamma, you did not join your fence of mint as well as I did; perhaps you had not a double row, or you left some little loophole for the mouse to push his little nose into. What do you think, mamma and papa? and what do you think, Harry?"

The door of the closet being open, he could see all that passed.

"Why do you not answer, Harry? What are you looking at?"

"I am looking at something which you had better see before you decide," said Harry.

Lucy followed the direction of his eyes, and saw, just peeping out over the top of a basket, which stood in the corner of the closet, the head of a cat.

"Oh, pussy! are you there all this time?" cried Lucy.

At this instant the cat jumped out of the basket, and stretched herself as she awakened. Upon inquiry it was found, that a servant, who had heard Lucy complain of the loss of her paste, and who had not known of the mint experiment, had put the cat into the closet.

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"Then I suppose," said Lucy, "that it was the cat frightened away the mice—I give up the mint."

"No," said Harry, "do not leave it to *suppose*; do not give it up till you have fairly tried the experiment. To-night make sure of the cat, and leave the mint as before."

This was done; and the result was, that the mint was found scattered, and the paste eaten.

"Now I *am* convinced," said Lucy. "But how very extraordinary it is, papa, that the mint should have succeeded for the man in the newspaper, and not for us."

"Perhaps he never tried the experiment," said her father.

"Oh, papa!" cried Lucy, "do you think anybody would publish that mint is an infallible preservative against mice, without having tried it? When I saw those words in print, papa, how could I help believing them?"

Her father laughed, and told her that she must not believe every thing she saw in print. "A friend of mine," said he, "once found a young man reading a romance called Amadis de Gaul, which is full of impossible adventures: when he asked the young man whether he believed that it was all true, he answered, 'To be sure, sir; it is in print.'"

"But, father," said Harry, "I think, unless Lucy had been very disagreeably suspicious, she could not have acted differently. How could she possibly tell that the man in the newspaper was not to be believed, or that his experiments were inaccurate? She has been used to live with people who tell truth, and who are accurate."

"For that very reason, my dear Harry, I, who have had experience of a contrary kind, should put her on her guard against that which, at her age, she could not possibly imagine, without being, as you justly say, disagreeably suspicious."

Harry felt that this was just; but still he looked as if he had something else sticking in his mind, and which his understanding could not swallow.

"What is it, Harry?"

"It is this, father," said Harry; "if we were to try all experiments over again before we believed them, we could never get on. Something must be believed—some things that are printed must be *taken for granted*."

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"True, Harry," said his father. "The question therefore is, *what* we should believe, and *whom* we should trust—you want rules to guide you. Is this what you mean?"

"Exactly," said Harry.

Here Lucy was tired, and went away to make his pasteboard model, leaving Harry to go down to the bottom of the well in search of truth.

"Well, Harry," said his father, "take, for instance, Sir Isaac Newton's experiments; before we tried them over again, you believed in them, did not you?"

"To be sure I did, father."

"And why, Harry?"

"Because I knew," said Harry, "that he had the character of being accurate, and that many other people had repeated them."

"Good and sufficient reasons they are, Harry. But when you do not know the character of the person who makes an extraordinary assertion, then how would you judge?"

After a few minutes' reflection, Harry said, "by considering whether the fact be probable or improbable."

"Right," said his father; "when any thing appears contrary to our experience, then it is necessary to examine the circumstances carefully, but at the same time candidly. Some things in science, that appeared incredible at first sight, have been found perfectly true. Remember the astonishment produced by the electrical shock—the powers of steam and gas—air-balloons, and steamboats. Suppose you heard of these things for the first time, you would probably have thought the accounts ridiculous. Did you hear what your mother was reading last night, from that new book of Travels in Mexico?"

"Oh, yes," said Harry; "you allude to the Mexican, who was told by a man from Europe, that by means of a boiling teakettle a thousand persons could be safely moved a hundred miles a day. This was only exaggeration. But there was also an absurd story which the poor Mexicans were told, that at Birmingham the clergymen are made of cast iron, and that they preach by steam. Now if I had been a Mexican, I never could have believed that, if fifty thousand people had told it to me, because iron cannot feel, or speak, or think."

Lucy returned to consult Harry about the pasteboard

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model. She waited respectfully while her father finished what he was saying. She heard these words—

"Then you feel, Harry, that no assertions could make you believe impossibilities; and that in all cases which are contrary to our experience, it is necessary to pause, and doubt, and examine. I may add, that you will sometimes find it necessary to doubt even the evidence of your own senses."

"Oh, papa!" exclaimed Lucy, "the story you told us of the celebrated instrument-maker and his wig, is a good example of that."

"What can you mean, my dear!" said her mother.

"Your mother was not present when I told Harry and you that anecdote," said her father; "explain what you mean."

"Then, mamma, I will tell you. There was a famous mathematical instrument maker—"

"Not there *was*, but there *is*," interrupted her father. "Happily he is now living, and will, I hope, long live to be of service to science, and an honour to his country."

"An Englishman, mamma," continued Lucy, "and a very, *very* famous instrument-maker—"

"Say Troughton—that's enough," whispered Harry.

"Well, then, Troughton," said Lucy, "having finished some great instrument, of which a magnetic needle formed a part, went to examine it for the last time, and found, to his great surprise, that the needle pointed to different divisions at different times. Having made this needle with great care, he could not believe that it did not do its duty; he thought there must be some key or knife about him which attracted it—but no, there was nothing of the kind in his pockets. He reasoned and reasoned, but in vain, he could not discover the cause; he tried again and again, the same effect always took place; and what made it still more wonderful was, that when other people looked, the needle was quite steady. This perplexing instrument was the first thing he thought of when he wakened next morning, and he hurried out of bed in his nightcap to look at it. He found it quite steady; yet after breakfast, when he looked again, it was again all wrong. But now, mamma, he had a distinct fact to guide him; when wrong, he had had his wig on—when right, his nightcap. He immediately examined the wig, and found that it was fitted with small *steel* springs, to make it sit close to his head.

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The wig was thrown aside, and the instrument was perfect."

"MAMMA," said Lucy, "I think it was scarcely worth while to spend so much time and so much talking upon those little cat, and mint, and paste experiments."

"My dear," said her mother, "if it be worth while to try an experiment at all, it is worth while to try it accurately. Half-tried experiments are waste of time indeed: they leave us no wiser than we were before; or, what is worse, they lead us to reason upon wrong grounds, and we become only the more ignorant and the more positive."

"You know, mamma," said Lucy, "I was willing to give up before I was quite convinced."

"Yes; but there is a great difference between being willing to give up and being convinced. Do you not feel that it is more agreeable, Lucy, more satisfactory to be convinced?"

"I do, mamma; if one gives up there is always a sort of feeling that one might have been right if we had gone quite to the bottom, as Harry says; and, after all, it is a very uncomfortable feeling not to be certain whether we are right or wrong."

"And I should be sorry, my dear Lucy," continued her mother, "that you were to despise what you call little experiments. Few people have the means of trying scientific ones; but many little experiments, which are both instructive and amusing, are within everybody's reach. Your ingenuity may be often more profitably employed in finding out the causes of common appearances, than in searching for those of the most extraordinary wonders in nature."

"But, mother," said Harry, "do you really think that one can gain much scientific knowledge by such accidental experiments?"

"No, Harry," said his mother, "certainly not much scientific knowledge; but it has been said by a very good and sensible man,* who made the human mind his particular study, that some exercises are worth pursuing, not so much for the knowledge actually gained by them, as for the discipline they give the mind. As

* Berkeley.

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there are some crops which the farmer sows, not for the sake of the profit they afford, but for their beneficial effect on the soil."

That is a beautiful allusion, thought Lucy; and the beauty of the allusion added much, in her mind, to the effect of the reasoning.

"Then, mamma," said she, "I wish you would tell me some experiments to try of this common sort."

"What are you going to do, my dear, with that piece of new tape which you have in your hand?"

"I am going to open it, mamma, and to cut off some strings for my frock."

"Well, before you begin, consider which is the best way to open it, that you may not tangle the piece, as you did the last which you took out of my workbox."

"The best way to open it, mamma? are there two ways?"

"Yes," said her mother; "some people begin from the outside, and some from the inside."

"I have always taken the first end I found," said Lucy, "which was on the outside; but now I recollect, mamma, that the other day you pulled the end out from the inside; so I suppose, since you did it, that must be the best way."

"Try, my dear, there is a little experiment for you."

"Oh! mamma, do you call that an experiment?" cried Lucy. "Yet to be sure it is," added she, "and a useful one too, if it settles the best way of doing what we want to do very often; and though it is a trifle, it is better to do it well than ill, and better not to waste time by the necessity of untangling it afterward, and better not to waste temper too. Now I have wound this piece upon a card without the least difficulty, and I am convinced that beginning from the inside is best."

"There is another obvious advantage in this method," said her mother; "when you have not time to wind the whole piece upon a card, you may take out as much or as little as you please, and leave the rest unwound, because the outer coils protect and keep in the rest."

"I shall follow the same plan with my next ball of twine," said Harry, "for that is very good reasoning."

"And there may be reasoning, I see, even about such a thing as this," said Lucy.

At that moment Lucy saw, in her mother's workbox, an amber-coloured bonbonniere of pellucid horn, starred with gold.

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"Oh! mamma, I like this better than the ruby-coloured boxes. Harry, do you know how it is made? Mamma told me that the horn is softened in boiling water, and then pressed into the proper shape by a brass mould: and those pretty little stars, Harry, she says, are first placed in the mould, and squeezed in by the same operation. Mamma, may I help Harry and myself to some of these many-coloured sugarplums?"

Leave being granted, Lucy opened the box; but when the top was off she exclaimed, at the sight of certain beautiful green sugarplums, "Do not touch them, Harry; stay one moment."

She searched in her portfolio for a bit of an old newspaper, and said, "Now, Harry, we may try a little experiment. Listen." She read as follows:—

"'*Test for detecting the poison of verdigris in sugarplums, sweetmeats, pickles, &c.*

"'It is said that some confectioners give their comfits and sweetmeats a green colour by means of that dreadful poison, *verdigris*. This, as everybody knows, is produced by vinegar, or any acid which corrodes brass or copper. The pickles which are admired for their beautiful green, are often made in copper vessels; and it is even said that cooks throw halfpence into the saucepan to improve the green of French beans.

"'A gentleman whose children had been made unwell by eating these green comfits, wishes to make known the following simple mode of detecting the presence of copper:—Drop on the comfits a little liquid *ammonia* (hartshorn); if copper be present, they speedily acquire a blue colour.'

"Now, mamma, I am not going to take it for granted that this man in the newspaper is right. This time I will try the experiment, before I say one word about believing or not believing him. If you will give me some hartshorn, mamma, Harry and I will try it this minute."

Her mother directed her where she might find the bottle. Having brought it, and selected from the box several of the greenest of the green sugarplums, which she put on a plate, she applied to them a few drops of hartshorn; then adding more and more, to make herself and everybody else quite sure of the fact, she cried, "They do not change to blue, mamma: these comfits, then, are quite safe. Hold your hand, Harry;" and pouring a good supply into it, she added, "you may now eat them without fear."

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"That I will," said Harry, as he transferred them to his mouth, "and without the least fear, because I never found that they did me any harm; and I am convinced they have no copper in them, nor poison of any kind. But, Lucy, my dear, if I had any doubt, I must confess that your experiment would not have quite satisfied me."

"Not satisfied you, Harry! Why not!"

"Because," said Harry, "you have not proved to me the truth of your *test:* you have not proved that hartshorn will turn verdigris, or any thing which contains copper, to a blue colour. That was the very thing you were to prove."

"Very true, indeed," said Lucy.

She now considered how she could try whether her test was sufficient or not.

"I must find a bit of copper—a halfpenny, mamma, will do; on it I will pour some vinegar, which will corrode the copper; and after we have let it lie some time, if we see the verdigris on the halfpenny, as I hope we shall, we will drop some hartshorn over it, and see whether it turns blue; then we shall be convinced whether hartshorn is or is not a test for detecting copper."

Harry said this would be a very fair trial; but his mother observed that the poison of copper was so dangerous, that she did not like to have Lucy undertake this experiment by herself; if they would wait till she was at leisure, she would assist them.

She was at leisure, or made leisure, that evening, and without being reminded of it, recollected her promise: she put two or three halfpence into a saucer, and covered them with vinegar—at the end of a few days she took the halfpence out, and left them some time exposed to the air, when they were most satisfactorily covered with verdigris.

"Quite green! Harry, look at them," said Lucy.

"But do not touch them," said her mother. "A few grains of verdigris, if swallowed, might kill you. Now, Lucy, for your hartshorn—drop a little on the verdigris."

She did so; the green colour was instantly turned to blue, and Harry was satisfied.

This evening, Lucy was preparing an effervescing draught for her mother, of soda and lemon-juice. The

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soda was in one cup, and she was squeezing the lemon-juice into the other; at one unlucky squeeze the lemon-juice spirted on her mother's gown, her own frock, and her brother's coat—coat, frock, and gown were stained in different ways. Her mother's gown was of purple silk—that was spotted yellow! but her mother instantly applying soda from the cup in her hand, the yellow spots vanished, and the purple reappeared. Lucy tried the same remedy on the coat, and on the frock, but it was not equally successful—and why?

Her father now joined in the conversation which this question produced; and Lucy went to bed, with her mind full of experiments that it suggested.

In days of yore she had been a little dabbler in vegetable dies; and her mother had let her dabble on, with saffron, poppies, beet-root, and weeds innumerable. All her dabbling was not quite in vain: she had learned some curious facts, though no general principles. Now recalled to the subject, she was delighted with the discovery of a book, the next day, in the library at Digby Castle, on "The Art of dying Wool, Silk, and Cotton!" From this she hoped to learn how to take spots out of cotton, silk, or woollen cloth; but though the immediate object for which she began to hunt through the book was lost in the chase, she learned a great deal that was more useful. This book told of vegetable, animal, and mineral dies, and those substances which chymistry has taught the dier to use, to brighten and to render permanent his formerly fugitive colours. The beautiful system of *mordants* opened to Lucy's view. With her understanding more enlarged than when she formerly tried the dier's trade, she could not be satisfied with mere receipts—she must know the reason for what she did. Thus, by degrees, with her mother's assistance and Mrs. Marcet's, the multitude of separate facts classed themselves in her mind; and from these slight experiments she gradually rose to general principles of chymistry.

"We have learned more by our little random experiments," said Lucy, one day, "than you expected, have not we?"

"Yes," said Harry; "because, though they were little, they were not random experiments."

Fresh subjects seemed every hour to arise, and with entertaining variety. But no more shall be told—

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enough is as good as a feast—in our opinion much better.

"HARRY, have you finished the model of the machine you were making with the pasteboard and the large pins?" said Lucy. "What a long time you have been about it."

"Because I made a great many mistakes," said he, "and was forced to alter it several times; but here it is at last."

After a critical examination, Lucy pronounced it to be tolerably neat, considering that it was a man's making. She thought the teeth of the wheels might have been cut rather cleaner, and with fewer jags left at the bottom of each. However, when the wheels were put in motion, the teeth took into each other well enough to show the nature of the contrivance. It was, as Harry told Lucy, an *odometer*, or a machine for measuring the length of road over which a carriage passes. This it was to perform by registering the number of turns made by the wheel of the carriage. If the circumference of a wheel is known, and the number of turns it makes are reckoned, it becomes easy to calculate the distance over which that wheel has rolled. But this machine, fastened on the nave of the wheel, would, as Harry hoped, save the trouble of calculation; it being so contrived as to show with two hands on a dial-plate, in miles and furlongs, the space travelled over. Harry added, that he had been trying to invent some machine for this purpose on the day he had been in the *dumps* during their journey. He could not then hit upon any contrivance which would answer, though he had watched the wheel so long; but, after thinking of it again and again, at different times and in various ways, he had at last made what he hoped would succeed.

When his father saw and had examined the model, Harry pointed out exactly what was his own and what was borrowed in the invention. Very little of it, he said, was *quite* his own; each part he had taken from different machines which he had seen at different times: the first thought was suggested by a common *way-wiser*, with which long ago he had seen a man measuring the

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road. "That machine, you know, father, measured by means of a wheel, and made me first think that one of the wheels of a carriage might be made to answer the same purpose. The way of connecting the turns of the wheel with the other parts of my machine, I took from something I saw at the cotton-mills; and an arithmetical machine, that I saw at Digby Castle, helped me to the manner of counting the turns, and showing them in miles and furlongs upon the dial-plate. So you see, father, hardly any of this was my own, except the putting it together."

His father highly approved of his integrity, which he valued far above any ingenuity. "But I must observe to you, Harry," said he, "that all invention is, in fact, only putting together in a new manner, or for a new purpose, what we have seen or known before."

As to this little contrivance, his father said that he would have it executed for him, in the proper size, and that he would give him an opportunity of putting it to the test of experiment, by which means he might see how far it would succeed, and what were its defects. "There is," he added, "a watchmaker in the village, who can, I think, divide this dial-plate, and cut the teeth in these wheels for us, and a smith who can do the rest of the work."

Lucy hoped that it would be ready by the first day when Harry was to go out in the carriage, and the surgeon said that might be the following Saturday.

Saturday came, and the carriage at the door; but the odometer, so far from being finished, was scarcely begun. However, this was no disappointment to Harry, whatever it might be to Lucy. On this first day of going out after his long confinement, so many pleasures of such different sorts absorbed his mind, that, as he acknowledged afterward, the odometer would have been too much. The freshness of the air, the sight of the country as they drove along, and all the old objects, now new to him, he enjoyed with the keen relish of restored health and liberty. Other and more exquisitely pleasurable feelings filled his heart; gratitude to Providence, and grateful affection to that dear father, mother, and sister, whose sympathy, and tenderness, and cheerfulness, had in so many ways made him happy. He scarcely spoke during the whole drive; and recollecting this just as they came home, while he pressed

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his mother's hand, he said he was afraid he had been very disagreeable. "I believe, mother, I have hardly said a word either to you or Lucy."

But his mother well knew the course his feelings had taken, and even Lucy had respected them in silence.

It was, if Lucy counted rightly, nine days beyond the promised Saturday before Harry's odometer was completed. Even when the best workmen are employed, difficulties in making a new contrivance will occur; but in this remote place various mistakes, trying to the patience of young and old, were committed. At last, however, it was completed, and was fastened on the carriage, and the carriage was driven on a road to a certain distance, the exact measure of which had been previously ascertained. Upon examination it was found to answer as well as could be expected on a first trial. There were some causes of inaccuracy, which Harry perceived, and thought he could remedy: it was taken off, and brought into the house; and while Harry and his father were considering how it might be improved, Lucy was talking in a low voice to her mother. Whatever it was she was saying, Harry's attention was so much distracted by it that he could not comprehend some very simple suggestion.

"Is it possible that you do not understand me, Harry?" said his father.

"No, sir, not yet," said Harry, blushing piteously; then suddenly he looked back at Lucy, and she stopped short. Her last word was "*patent*."

"Nonsense, nonsense," muttered Harry.

Her father smiled. "Now I perceive," said he, "what confused Harry's understanding so much."

"Father, I assure you," cried Harry, "I never thought of such a thing for myself."

"But why should not he, papa," said Lucy. "Do not you remember the history of the young gentleman of eighteen, who had a patent for a new invention?"

"But I am not a young gentleman of eighteen," said Harry, "I am only a boy."

Notwithstanding Harry's deepening colour and tone of discomfiture, Lucy now went on, because she fancied that her father would agree with her, and that it was only Harry's bashfulness which made him oppose her so bluntly. But her father gravely and decidedly told her that he thought Harry was quite right, and that he

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was glad that he had good sense enough not to have formed any such scheme for himself. Lucy said no more.

"Harry," said his father, "a friend of mine, twelve years ago, invented a measuring machine on a new principle, superior to yours, and to any I have seen. He has tried it for four years, applied to the wheel of his gig, and he has sent an account of it to Dr. Brewster's new series of the Edinburgh Philosophical Journal."*

Harry was very curious to see it, and especially desirous to know the new and better principle. His father promised to show him the description of the contrivance as soon as he could get the Journal.

"Then yours is now of no use, Harry," said Lucy, with a sigh. "I suppose you will not do any thing more to it."

But Harry said that he should be ashamed to leave it till he had made it succeed; at least till he had tried to mend its faults.

This resolution, and his immediately preparing to carry it into execution, obtained for him from his father a look of affectionate approbation: happy in this, he went off with his odometer to the watchmaker's. As soon as he had left the room, Lucy returned to the subject of the patent.

"Papa, I suppose that the reason why you said it would be foolish to think of a patent for Harry, was because you knew of this better machine."

Her father said that this was not his reason.

"Then, papa, perhaps there is something about the expense of a patent which I do not understand. But putting that out of the question, would not you be glad that he had the honour and glory of it?"

"No, I should not," answered her father, "even supposing any honour and glory were to be obtained by it."

"Nor I, Lucy," said her mother, "though you look so incredulous."

Lucy paused again upon this.

"Then I see how it is," said she; "yet I should never have thought it. You would be afraid that it might make him vain. But I really do not think he is the least inclined to be so."

"Well, if he is not," said her father, "why should we try to make him vain? Why put him in danger?"

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"I do not think, papa," said Lucy, "that there would be any danger of that sort for Harry."

"My dear, no human creature is altogether exempt from vanity: the most sensible people are most aware of the danger in themselves, and carefully guard against it. But, independently of the risk of making your brother conceited, there are other reasons which would prevent me, as his friend, from desiring that he should be early brought forward into public notice. If my son were really a genius—if, for instance, like Bernini, a famous Italian sculptor, he had at twelve years old produced a work to wonder at, I should not have done what his father did, and should not have set it up in the Vatican to receive the public admiration. The observation of the French wit is generally found to be true—C'est un fardeau très pesant qu'un nom trop tôt fameux. Can you translate that, and apply it, Lucy?"

"A name too early famous is a heavy burden," answered Lucy. "You mean, papa, that people might afterward expect too much from such early fame. But then, if Harry could do more and more, and go beyond what is expected, how glorious that would be!"

"It would; and in some few instances that has been found to be the case. For example, Bernini exerted himself to support his early fame, and succeeded; but, in general, boy-wonders sink into insignificant men."

"Without being a wonder, however," said Lucy, "it is surely a good thing that a boy should be thought clever: and I have heard people say that Harry is clever for his age; so have you, mamma, and you like to hear him praised. Do not you, mamma?"

"I acknowledge it," said her mother. "But this is no proof that it is good for him."

"I know that you and papa must be right," said Lucy; "but still I should like to understand exactly all the harm it would do him."

"It would probably give him the habit of expecting praise for the slightest exertion," said her father, "and then he would feel unhappy, and unable to exert himself without it. This is one of the first inconveniences usually felt by those who have been early over-praised; he would afterward find other bad consequences of more importance. He would no longer be satisfied with the feeling of doing what is useful and good; he would act, not from the right motive, the desire to do his duty, but

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merely from the wish to obtain praise. Then he would necessarily become dependant upon the opinions and caprice of others, and might, perhaps, be led to do what is foolish or wrong to obtain applause. Even if his good principles preserved him from doing wrong, and his good sense from doing what was foolish, still he would lose that strength and vigour of mind which should enable him to labour hard and long, as all must do who wish to attain eminence in any science, or excellence of any kind, moral or intellectual."

Sir Rupert Digby, as it may be remembered, told Harry that a kite had been lately employed for the useful purpose of assisting in cases of shipwreck.

Since they had lived on this coast, Harry had heard instances of ships driven on the rocks in such situations, that, in a storm, boats could not get out to their assistance; and sometimes the vessels and all on board had perished, actually within sight, and almost within hail, of the people on the shore, who had no power to help them. In circumstances such as these, a kite that could carry out a line of considerable length, and then drop in the right place, might effect a communication with the shore, and might be the means of saving the lives of the crew.

The idea of this kite had often, during Harry's illness, flitted before his mind. He longed to know how it was contrived. He had brought home the volume containing an account of that ingenious invention; but his father had advised him to try if he could think of any way of effecting the purpose himself before he read the description. His father now told him that Captain Dansey's kite was not made of paper, but of light canvass, stretched upon two cross sticks; and that, as those materials were to be found in every vessel, it might, in case of necessity, be made in a few minutes. Such a kite, it was said, had carried out, in a strong breeze, a rope of half an inch in circumference, and two thirds of a mile in length.

"But," continued his father, "you know that the chief peculiarity of these kites is the ingenious apparatus for making them suddenly descend; and it is fair to tell you that this is effected by a messenger, which travels

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up the string, and detaches it from the bellyband or bridle, though the string itself remains fast to the head of the kite. Now, Harry, an easy but certain method of doing this is what you have to contrive. However inferior your method may be, still it will be a good exercise for your invention, and on an interesting and useful subject, within your reach."

To assist him a little further, his father added, that the messenger was composed of a hollow cylinder of wood, through which the string passed, and of four cross arms, on which a small sail was stretched. All this being explained, the question recurred to Harry at every spare moment; and after devising sundry complicated contrivances, which were one after another rejected, he at last brought one of his projects to a simple form, and immediately set about its execution.

Of the strong wire which had been given to him for his suspension bridge, he had some left. He bent a bit of this wire into a shape something like that of a pair of sugar-tongs; and about half an inch from each of the points of these tongs, he again bent the wire inwards to nearly a right angle. These points, however, did not meet; but, when the tongs were slightly compressed, they not only met, but lapped over each other. He then cut a narrow hole or slit in a thin bit of wood, so that, when his tongs were pushed into it, they were squeezed together, and the points lapped over. The elasticity of the wire prevented the piece of wood from slipping, though a slight blow would push it off, and allow the points to open. So far being completed, Harry carried his work to his father, and explained to him his plans.

"The bridle of the kite," said he, "is to be hooked on the bent points of these tongs; and you see, father, they must hold it fast till the messenger knocks off this piece of wood; the tongs will then open, and the bridle will slip off. To the middle or handle part of the tongs, the main string is to be tied; but I shall also connect it, by a short, loose piece, to the head of the kite, which would otherwise blow away when the bridle slips off the hooks."

This all sounded well; but would the force of the messenger be sufficient to drive the bit of wood off the ends of the tongs? This could be only proved by experiment, and Harry was eager to try it.

His father had the wooden cylinder for the messenger

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turned for him, on a small scale, proportioned to his kite. It was about six inches long, and two inches diameter; its wooden arms about eight inches in length. The sail was made of a square piece of light linen, the corners of which being stretched out and tied to the arms, the messenger, with its sail, was complete and ready for action.

Harry's kite was small, but of the same proportions as Captain Dansey's. It was made simply of two laths tied together in the middle, cross-form: the cross lath being two thirds of the long one in length, and placed within one third of its length from the top. A square silk handkerchief formed the covering. He stretched it over the laths, tying one corner at top and one at bottom over their ends, then stretching the two upper sides to the ends of the cross lath, and tying them in the same way with twine, he left the remaining part of the sides and the corners to hang down as flaps or wings.

The tail was made with coarse, broad tape, and small bits of wood, instead of wisps of paper. A coat-button was tied to the lower end of the kite, a buttonhole being made at one end of the tape, so that the tail could be buttoned on or taken off at pleasure. This was a convenience when it was to be carried out or put away. For entering into these trivial details, Harry may be blamed by critics, but perhaps may be applauded by future kite-makers.

Anxiously was the wind watched every morning, now that the kite was ready for trial. At last a day came when there was happily wind sufficient, and out sallied Harry, his father, and his kite. It was some time before Harry could get it up. It fluttered with uncertain motion, rising a yard or two, then sinking, it trailed on the grass. A fresh breeze raised it the whole length of its tail, which, floating obliquely, seemed to struggle and writhe in the air. By degrees it rose higher, flapping its silken wings. Harry held in the string till he felt that the wind had power over the kite. Then he judiciously let out the line more and more, or less and less, as he felt the force slacken or the gusts increase. Now running with the kite, now stopping—feeling, as it were, with its feelings, humouring its humours, aiding its weakness, and glorying in its strength. Joyful at last he saw it clear the trees, rise rapidly in the higher regions of air, and there rest in steady poise.

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"It is up!" cried Harry.

"But can we bring it down?" said his father.

Up goes the messenger, the wind carrying it swiftly along the line,—it appeared to fly gladly on its errand.

"But will it, can it do its business?"

For a few seconds this doubt kept Harry and Harry's father breathless. The little kite reached and darted upon the larger. They struggled, or seemed to struggle, for an instant, like two birds in unequal contest. The little one gained the victory.

"It's done! it's done!" cried Harry; "the kite is falling!"

And gently and safely both came down together. Harry ran to the spot where they fell, to separate them, and to see whether they had done any mischief to each other.

"All safe! Not the least damage done!" cried Harry.

"Nothing could succeed better. I give you joy Harry," said his father.

But there could be no complete joy without Lucy. Harry said he would run home to tell her and his mother all about it, and to show them his good little messenger. He had kept the contrivance by which the kite was to be brought down a profound secret even from Lucy, having determined to try it the first time with no one by but his father. And if it should answer, then he hoped to delight Lucy doubly with the pleasure of the success and the surprise.

While Harry had been flying his new kite, Lucy's mind had been occupied with far other thoughts. She could not guess what he and her father were about; for Harry had taken out his kite by a back way, and then returning to the breakfast-room, had said in a half whisper, "Can you come out with me now, father?"

"Yes, Harry, I am at your service."

"So am I," thought Lucy. "Yet he is going without me."

There had been, for some days past, conferences and consultations between Harry and his father, as Lucy had remarked, to which she was not summoned; her curiosity and some other uneasy feelings were excited, which she could hardly suppress, and yet did not like to

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express. She had been so much accustomed, especially of late, to know and to be interested in all that occupied Harry, that she felt a sort of disappointment when she was excluded from these secret councils. Her curiosity was now raised to an almost insupportable height, by the signal, the half-whisper, the abrupt exit, and secret expedition of this morning. They had thrown open one of the breakfast-room windows, and jumped out. Her eyes followed them as they walked briskly away. She then took up a book to read, but soon laid it down, and went to her drawing-table; then she opened her workbox, and at last sat down near her mother. After an unusual silence, Lucy suddenly asked her mother to guess what she had been thinking of all this time.

"It will be easier for you to tell me, my dear Lucy," said her mother, smiling.

"I will, mamma," said Lucy. "And yet I do not know why, but I am a little—however—I will. Then, mamma, you must know, that all this time I have been thinking, or rather trying to hinder myself from thinking, of something which I know is not quite right; but still the thoughts come, and I cannot help saying to myself, I wonder why Harry did not wish me to go with him. I know this is all foolish curiosity, mamma—you are going to tell me so."

"I was going to remind you, my dear, of the iron door," said her mother.

"Ah, yes, to be sure; but it was easy to put that out of my head. Besides, I did not care much about the iron door, but I do care about Harry; and is it not natural to be anxious about what concerns him, mamma?"

"But if he wishes you not to know it—"

"I know what you are going to say," interrupted Lucy, "that it is not right for me to try to discover it; therefore I really want to put it out of my head. Pray tell me, mamma, how to do that."

"Turn your thoughts to some other subject," said her mother.

"Indeed, mamma, I have been trying to do so," said Lucy. "I took up a book, but I read the same sentence over and over again. Every instant I found myself looking out of the window at papa and Harry, walking down the avenue. The same ideas would come back: 'What are they talking about?' 'What are they going to do?' I cannot think of any thing else."

"If you cannot think, *do* something, Lucy," said her

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mother. "Suppose you were to cut open the leaves of that review for me. Take this new mother-of-pearl folding-knife, which your father gave me this morning. Is it not pretty?"

"Very pretty," said Lucy, looking carelessly at it.

"Do you see the colours which change continually as you move it?" said her mother.

"They are beautiful!" said Lucy; "but I have often observed such colours in mother-of-pearl."

"But did you ever consider what produces these colours?" said her mother.

"The reflection of light from the polished surface of the mother-of-pearl, I suppose, mamma," said Lucy.

"Then why do you not see the same colours from the polished handle of this ivory knife?" said her mother, placing the two before her in the same light.

Lucy now began to examine the mother-of-pearl more attentively. She was struck with the succession of beautiful teints that were developed by the least motion, and asked her mother if any thing was known about the cause of these changing colours.

"Yes, my dear," said her mother. "It has been lately discovered, that the cause of these colours depends upon a singular peculiarity in the structure of mother-of-pearl. On its surface, which to your eye and touch appears so finely polished, there are innumerable scratches or indentures, in some places as many as two or three thousand in the space of an inch, and lying parallel to each other, whether in straight lines, in waves, or in circles."

"Three or four thousand in an inch, mamma! but I cannot see one of all these thousands: I cannot feel even the slightest roughness!"

"But with a microscope," said her mother, "and sometimes even with your pocket magnifying-glass, you would see this exquisitely smooth surface full of the little lines or *grooves* that I have described. Some people compare them to the delicate texture of the skin at the top of an infant's finger."

Lucy, continuing to rub her finger over the polished surface, said, "But, mamma, what can these scratches have to do with the colours? I have a knife with scratches all over its handle. Look at it, mamma: you see it has no colours."

"But the handle of your knife, Lucy, is not of mother-of-pearl."

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"No, mamma; but if scratches are the cause of the colours in the one case, why not in the other?"

"There is a great difference, Lucy: the indentures in mother-of-pearl regularly follow each other in all their windings; the accidental scratches on the ivory cross each other at random. The rays of light are reflected by the edges of the grooves; and the continual change of colour arises from their continual bendings and turnings."

"Then, mamma," said Lucy, "by polishing the mother-of-pearl still more, we should get rid, I suppose, of all these little grooves, and there would be no more colours."

"Polish as much, and grind it down as much as you will," said her mother, "as long as any of the mother-of-pearl remains, you will still find the grooves. The same structure is not only at the surface, but throughout the whole substance."

"How extraordinary!" said Lucy.

"I have a still more extraordinary fact to tell you, my dear," said her mother.

"Oh! what, mamma?"

"That the colours which you see on the mother-of-pearl, can be communicated, by pressure, to sealing-wax, and several other substances."

"Is it possible, mamma?" cried Lucy. "Well, since nothing should be taken for granted, will you be so very good as to tell me how all that is proved."

Her mother told her that it was Dr. Brewster who first discovered the cause of the colours seen in mother-of-pearl; and that afterward, having stuck a piece of it on cement made of rosin and beeswax, he observed that the cement, when separated, had actually acquired the property of producing the same colours.

"Was not he excessively surprised?" said Lucy.

"He was surprised; and several gentlemen who saw the experiment, thought that this unexpected phenomenon was caused by a thin film of the mother-of-pearl, which might have scaled off, and stuck to the cement. A very simple experiment, however, convinced them that this conjecture was a mistake. He made a fresh impression of the mother-of-pearl on black sealing-wax, and then plunged it into an acid* which does not

* Nitric acid.

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affect wax, but which is known to destroy the substance of which mother-of-pearl is chiefly composed.* If there had been left on the wax the slightest film of mother-of-pearl, it must have been dissolved; but the acid had no effect, and the prismatic colours of the impression remained undisturbed. This, you see, was a complete proof that there was no film of mother-of-pearl left on the seal."

"It does satisfactorily prove, indeed, mamma," said Lucy, "that it was the grooves, as Dr. Brewster thought, which caused the colours, both in the mother-of-pearl and in the impression on the wax."

"Yes," said her mother; "and he tried similar experiments on other substances, such as tin-foil and lead, and all showed the prismatic colours in the same manner, and from the same cause; so that the fact, and its cause, are quite ascertained; and you find, Lucy, that you may believe them without taking any thing for granted."

Lucy was quite satisfied, and rejoiced at understanding how the proof was complete. "This is another instance, mamma, of the advantage of trying to find out the causes of the common things we see every day. How much Dr. Brewster's accidental observation led to!"

"And to more than you yet know," said her mother. "I will read to you part of a letter your father received this morning from him:—

"'There is also a very extraordinary fact respecting the communicable colours in mother-of-pearl, which deserves to be mentioned. One set of these colours is produced by the right side of the grooves, and another set by the left side, and *both* of them are distinctly seen when the mother-of-pearl is *polished;* but when the polish is removed by rough grinding, one of the sets *invariably disappears.* The rough grinding, therefore, destroys the effect of one side of the grooves, without affecting the other.'"

Lucy's mother then told her that, in consequence of Dr. Brewster's discovery of the cause of the colours in mother-of-pearl, another ingenious gentleman† produced the same appearance on glass, and on different metals, by simply cutting grooved lines on their surface. "The lines are so fine," she added, "that without a microscope they are scarcely discernible, and the glass and the metal appear to retain their polish; yet they and

* Carbonate of lime. † Mr. Barton.

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the colours also may be communicated by an impression like those from the mother-of-pearl to the wax."

Her mother then showed her a gilt button, the lines on which had been struck by a steel *die;* and a bit of glass, on which they had been cut by a diamond; and from both she saw the prismatic colours reflected as beautifully as from mother-of-pearl.

"But, Harry!" exclaimed Lucy, "all this time I have forgotten about Harry: how very nicely you turned my thoughts for me, and quite put out of my head what I could not drive away. Mamma, this is all your doing: I wish it had been my own."

"The best part of it is yours, my dear child," said her mother, "the wish to do right. The asking for advice and assistance was your own."

"I wish I could manage my thoughts for myself, in the same way," said Lucy. "That curious discovery entertained me so much, that I forgot every thing else. Mamma, this is another advantage of having a taste for things of this sort; they help us to turn our mind from what you call foolish curiosity."

"Yes, Lucy, they will often assist you in managing your own thoughts and your own mind," said her mother. "This is one of the great benefits which women derive from cultivating their understanding, and the best use they can make of a taste for literature and science."

"Mamma," resumed Lucy, after some pause, "I am very glad that you let me *go on* with Harry. I am sure it has been the cause of great pleasure to me. Even on the journey, it was so pleasant to be interested in the same things. But, above all, during Harry's illness, it was the greatest happiness to feel that he liked to have me with him always, reading and talking to him, and being interested in the sorts of things which he liked best. Mamma, I hope you do not think it has done me any harm? I hope you do not think that I have grown careless about other things?"

"Not in the least, my dear," said her mother; "on the contrary, I perceive that you have become more attentive to all which it is necessary for you to learn."

"One other question, mamma, and I shall be quite happy if you can answer it as I wish. I hope, mamma, that you do not think that I have grown conceited?"

"No, Lucy," said her mother; "I think it will be with you as I have observed it has been with others

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who are properly instructed—that the more they know, the less danger there is of their growing vain. They find out how infinitely much more there is to be learned, even from the most common objects by which they are surrounded."

"Yes, mamma," said Lucy; "and I begin to feel the truth of what you have often said to me, that the more we learn of what are called the works of nature, and of the wonderful inside of our own minds, the better we must become, and the more pious. I am not sure whether *pious* is the right word, or *religious;* but you know what I mean."

"I do, my dear," said her mother; "and as to the words, it is of little consequence what words you use to express this sentiment, if you feel it, as I hope and believe you do, sincerely and firmly."

"HERE he comes! Oh! mamma, here is Harry and his kite," cried Lucy, running to the window. With a face radiant with joy, he came bearing his kite in triumph. High she threw up the sash, and he sprang in, joy adding to his natural elasticity.

"Lucy! my dear Lucy! It does! It will do," cried he. "I would not tell you till I was sure it would succeed. Oh! mother! it does better than even my father expected. But come out, Lucy, come out and see it. We will put it up again for you, for there is no joy without you and my mother. Let me tell you about my messenger."

Then eagerly he began to explain his kite and his messenger. But now, when Lucy saw Harry's kindness, it struck her how unjust she had been: she was ashamed of her past feelings, and looked at her mother with a consciousness, and a change of countenance, which Harry perceived. He became confused, though in the middle of a panegyric on his messenger; and after making some attempts to piece his story with—"and so"—"and so," he stopped, and putting into her hand a knot in the string, which he had been endeavouring to disentangle—

"Untie this for me, will you, my dear?" said he. His eye added, "What is the matter?"

"Nothing—nothing worth telling you, I mean," an-

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swered Lucy. "It was only that I was very, very unjust, and that I am exceedingly ashamed."

"That you were a little foolish, my dear, I will not deny," said her mother; "but you need not be so exceedingly ashamed, because you did your best to conquer your foolish feelings: this is all that the best of us can do."

Lucy told her brother all that had passed in her mind. He regretted that she had been vexed; but was glad, he said, to know how it was, that he might avoid doing the same thing again: and she assured him that it was all her own folly, and that she hoped never again to be so weak.

"There is your knot untied for you, brother," she added, returning the disentangled string, "and now all's right again."

"Thank you; all is right," repeated Harry.

And all will be right, and will continue so between friends, who, in this manner, speak openly to each other of those little feelings, of which, perhaps, they are at the moment ashamed.

This affair being cleared out of Lucy's head, there was some chance of her understanding Harry's contrivance; and she and her mother went out and saw another experiment of the kite, which succeeded even better than the first. The wind blew stronger; and with bolder wing, as if better knowing his business, the messenger darted up to the very heart of the kite, and at one stroke accomplished its purpose. Lucy rejoiced in the messenger's happy performance of his mission, and looked forward with still greater pleasure to the idea of seeing the kite carry out a line from a boat to the shore. She asked her father when the experiment might be tried; and Harry observed that, as Dame Peyton's sailor-son had come home, and was permitted the use of Sir Rupert Digby's boat, they could have his assistance. All the circumstances of a pretty little shipwreck were quickly arranged and rehearsed in Lucy's imagination, with the different parts assigned which each was to act in saving the stranded vessel. Harry's mind, in the meantime, went to work at calculating the proper size for a new kite, which would carry out a serviceable rope. But his mother put an end to any further operations by reminding Harry that, as he was now perfectly recovered, they were to leave

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Rupert Cottage immediately; and in these circumstances, the making of a kite of ten feet long would not be very convenient.

Lucy thought that, as it was only for an experiment, it might be as well tried with the little kite. "All we want, you know, Harry, is to be certain that you can launch the kite from the boat: we on shore can make a signal when it is right over our heads, and then off you would send your good little messenger, and everybody would see how well it did its business."

A circumstance which they had left out of their calculations, but which was absolutely essential to the experiment, settled the business. During the few remaining days of their stay, the wind never blew the right way, or strong enough to carry up a kite. The weathercock was every morning watched in vain; and frequently did Harry and Lucy walk along the beach, in hopes of seeing a fine seabreeze curling the water. In one of these walks, a boat, that was rowing along the shore, stopped abreast of Harry and Lucy, and a gentleman in it, whom Harry knew, asked him if he thought his father would be so good as to lend him his small telescope. Harry ran to ask for it; and his father, with the telescope in his hand, walked with him to the seaside, and permitted him to accompany the gentleman, who promised to set him ashore as he returned. When he came back, Harry described to Lucy all he had seen; and, what was on the present occasion more interesting to her, repeated all he had heard of some people who were lately saved from shipwreck by the use of lifeboats.

"A *life-boat*, Lucy," said Harry, "is a kind of boat which cannot sink. There are several kinds. That which was described to me was lined with large copper tubes, empty and air-tight; so that in a storm, if it should fill with water, the air in the tubes would still buoy it up. With such a boat, people can go out to a ship in distress when none other could possibly venture to sea."

The gentleman, pleased with Harry's zeal and intelligence, had talked to him much on that subject, and had related to him several anecdotes of a benevolent old Quaker, who was in the habit of going to the seacoast every year for the recovery of his health. That part of the shore was very dangerous; and hearing of frequent

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shipwrecks, he had a life-boat built, which cost him three hundred pounds, and made a present of it to the inhabitants. The generous old Quaker constantly rewarded those who were most adventurous in going out in it. He was old, infirm, and very ill when the gentleman last saw him, evidently dying, but his mind was as much alive, and his feelings were as warm, as if he had been eighteen instead of eighty.

At that last interview the life-boat was talked of; then his enthusiasm broke out: he seemed to forget his years and infirmities; and, conquering bodily pain, he started from his seat, and took the gentleman to his boat-house. The boat was mounted upon a carriage with wheels, that it might be ready for rolling down to the shore. They could only get up the side by a ladder, but the old man climbed up without assistance, jumped into the middle of the boat, showed every part, and appeared to feel a generous triumph in the lives it had already saved, and those which he hoped it would yet save. This was the last time he ever saw him, and the last time this benevolent old man ever saw his boat—he died a few days afterward! All who knew him—the whole country, flocked to his funeral: and it was very singular, the gentleman added, that while they were attending it, the most violent storm came on that had been known for many years; a vessel was cast upon the rocks, and the people returned just in time to launch the life-boat, and to rescue three persons who would otherwise have perished.

The name of this humane and truly charitable man was Backhouse, a name that better deserves to be remembered than that of many celebrated heroes. Warriors are often famed only for the number of lives they have destroyed, but this excellent Quaker ought to be remembered for the number of lives he has saved.

A DAY or two before they left Rupert Cottage to return home, Harry went the first long walk he had been allowed to take since his release from confinement. It was to Digby Castle, by the mountain-path. The day was bright, and every thing was fresh and pleasant. The path, in many places, was quite as nar-

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row as those could desire who love the narrow path of danger. There was full opportunity, also, for scrambling up and down the rocks, so as to try, to his heart's content, the newly-recovered use of his limbs. But at last the mountain-path ended, and they came upon the road.

Here Harry and Lucy walked slowly and soberly, and recalled to each other's memories the first time of their coming this road; the happy days they had spent at Digby Castle, and all Sir Rupert's and Lady Digby's kindness to them. Then they talked over what had passed at Rupert Cottage, in the *olden* times of the canal, and the lock, and the roof; and even on the misfortunes of his broken bridges Harry could now moralize with composure. He had, besides, the consolation of reflecting, that the failure in his bridges had led to his learning mathematics.

When once their recollections began they went on, or rather went backwards, through the whole time since they had left home. They travelled their journey over again, and tried how much they could remember of what they had seen or heard. Their recollections were very different, but between them much was made out, the one supplying what the other forgot. Lucy recalled a variety of little entertaining circumstances which had escaped Harry's memory, and she benefited still more by his clear remembrance of the solid and useful. She was anxious to show Harry that the pains he had taken in explaining some things to her had not been thrown away; and her father, who now joined in their conversation, observed that she did her brother credit.

"Then, father," said Harry, "it is all owing to those first experiments you took so much pains in showing us, when we were quite children. For instance, you made me then clearly understand the principle of the barometer; and that one thing clear and fixed in my mind was, I have always felt, the greatest help to me. There was something I was sure of—something I could always go back to."

Lucy said she had felt the same; and that unless she had understood about the barometer, and the vacuum, and the pressure of the air, Harry could never have got her on, through the pumps, to the steam-engine. She lamented, however, not remembering more of the va-

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riety of curious things which she had seen on her journey.

"Oh, mamma," she continued, "I wish I had kept a journal! then I should have had them all safe."

"Your having them all safe on paper," said her mother, "would be useful, because you could refresh your memory from time to time; but it would be still better if you had them all in your head, so that you could recollect them at any moment."

"Certainly, mamma; but do you not think that writing down things would fix them better in my memory?"

"I am afraid not, my dear," said her mother. "I have often found that I completely forget those things which I had written down."

"But why is that, mamma?" said Lucy.

"Perhaps because we ease our conscience of them," said her mother, "and never make any effort to recollect them. There is an English saying, 'What is written remains.' It may remain on the paper, but not the better on the memory. The Italian proverb is probably more correct, 'L'ho dimenticato perche l'ho scritto.' I have forgotten it, because I have written it."

"Perhaps," said her father, "another reason is, that we are apt to write *mechanically*, that is, without thought; and what we do without thought we seldom remember."

"But, papa," said Lucy, "if I had kept a journal, I must have tried to recollect the things at the time I was to write their description in my journal: though, after all, I dare say that I should have trusted to Harry's memory. He used to ask me every evening if I remembered such and such a machine that we had seen in the day; and he reminded me so well of all the parts, that I scarcely endeavoured to recollect them for myself."

"You see," said her mother, "that you depended on your brother, and did not exert your own memory. Though yours is, perhaps, naturally better, his has served him more usefully."

"Yes, mamma," said Lucy; "but I really believe that talking of what we have seen or heard makes one remember better than even writing down. The pleasure of talking is a great help," added she, laughing.

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"I think there is also a pleasure in listening," said Harry.

"Certainly," said Lucy, "When one is listening to what is interesting or new; but otherwise I hear, as it were, without listening, and then the words go in at one ear and out of the other—I have only the sound left."

"Yes, Lucy," said her father, "you hear *mechanically*, without attending, in the same way as you would copy with a machine. Your mind is then merely passive; whereas, the pleasure of any successful exertion, as well as the labour of thinking, have the effect of fixing ideas or impressions in our minds. Pain or pleasure of any kind, joined or associated with our thoughts, secures them in the memory, and assists us in recollecting them. If you reflect on your own mind, I think you will find that to be the case."

Harry drew closer to his father. This was a subject peculiarly interesting to him, as he had lately been so intent upon finding out what he called the workings of his own mind. His father stopped short, and good-humouredly remarked, that though Lucy knew much less than Harry did, yet she had told them much more of what she had seen and heard.

Harry was silent; and Lucy, feeling for his condition, filled up the interval with talking, to give him time; and she finished with an allusion which relieved his embarrassment, and made even his gravity smile. "Papa, Harry and I are like two bottles—one full, and the other with very little in it: shake the full bottle, and you hear no sound; but shake the half empty one, and you hear it rattle finely."

By this time they were within sight of the castle, and Harry, heartily glad to be excused from further explanation, came forward to open the gates for his mother.

Their good friend the housekeeper had from her turret window descried their approach, even from the farthest end of the avenue, and she had prepared for them a luncheon, such as might have tempted the most determined anti-luncheonist to break his resolution. These were the first strawberries of the season, from the forcing-house, which the gardener was proud to set before his master's friends. Since, as he said, his master and mistress were not at home, this was the best could become of them. All were eager to offer Harry the best

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of what the castle could afford, for the history of his accident was well known. The father of the child he had saved waited upon them, and lingered, and looked often and long before he could feel convinced that Master Harry was quite himself again—as stout in his limbs, and as good as ever. His last excuse for coming into the room was to bring a message from the steward, about a box which had come from Sir Rupert, with some lamps, which he could not rightly understand, and begged to show them to Harry's father. They were found to be miners' safety-lamps, which Sir Rupert, before he left England, had bespoken, and had given orders should be sent to an estate of his at some distance, where there were coal-mines. By some mistake this box had been sent to Digby Castle. It was a mistake by which Harry profited. Once he had had a glimpse of one of these lamps in the mine, which he had seen on the journey, but his father had not then explained it to him. The ready footman carried one into the library, where Harry might examine it at his leisure. His mother found for him the description and explanation of the lamp in the Philosophical Transactions, which he immediately read, with the lamp before him. He was struck with the simplicity of this admirable invention, by which the lives of thousands have been saved from the destructive explosions of the *fire-damp* in mines. But what particularly delighted Harry was the account given by the inventor of the way in which he was led, step by step, to the discovery, on which the excellence of this really wonderful lamp depends. First, he discovered, that flame will not pass through long tubes of less than a certain diameter; then that tubes of metal conduct away heat better than those of glass, which determined him to use metal. Then experiment proved to him that it was the diameter, and not the length of the tubes, that was essential to his purpose, in consequence of which he shortened and shortened them, till, to his great satisfaction, he found that tubes might be dispensed with entirely; and that a plate of metal, perforated with small holes, or even wire gauze, with interstices of the same diameter as the tubes, would answer equally well.

As Harry's father observed to him, there cannot be a finer example of the rise, progress, and perfecting of a useful philosophical invention. In the first place, no part of it was owing to accident, to any lucky hit, or

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even to any casual observation, but all was the consequence of a settled good purpose working in the mind of a man of science, genius, knowledge, and humane views. He had heard of the destruction caused by fire-damps, and determined to try what could be done to avoid or prevent the danger. His first step was to go down into the mines, and examine into the nature of these noxious vapours. His previous knowledge of chymistry was here essential to his success, and each step was forwarded by his philosophic habits in trying experiments; by his observing and reasoning on all appearances before him, and employing alternately theory and experiment; that is to say, first forming a conjecture how the thing might be done, and then impartially trying whether his suppositions were right or wrong.

"How much the public," his father added, "and how much young people of rising genius, are obliged to inventors who both *can* and *will* thus lay open their minds! Many ingenious persons seem not to have had the power of describing their own inventions; for instance, Vaucanson, a celebrated French mechanic, who never could describe his own machines. Others, like Hooke (whose life, Harry, you read lately), have been so suspicious of their rivals, that during their whole lives they would not open above half their minds, and at their death left their contrivances locked up in enigmatical language. They seem to have taken pains to obliterate all traces of the road their minds took, lest rivals should follow in their tracks. But, my dear son, observe, that really great men are superior to such mean jealousy. You feel how much Sir Humphrey Davy has in this instance, by his openness, increased our admiration and gratitude."

When they were setting out on their walk back to Rupert Cottage, Harry said to Lucy—

"Let me go on before with my father, I want to talk to him alone."

"Very well," said Lucy, "this time I shall have no foolish curiosity."

"You need not," said Harry. "It is no secret. If you please, I will tell you my reason for wishing that you should not be by."

"No, pray do not, Harry, I assure you I am not curi-

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ous *now*, so go on with papa; my mother is going to make a sketch of Digby Castle from this place; I have paper and pencil, and I will also try what I can do. Will you wait for us at the suspension bridge?"

"Thank you, my dear good Lucy," said Harry, taking her pencil from her hand, and cutting it to a fine point; "but you must let me tell you my reason; it is only that what I want to say to papa is all about myself; and you know that when one has to talk of one's self, and one's own little feelings and schemes, one can speak much more freely when nobody else is present."

The fact was, that the sight of the miners' lamp, and the account of that discovery, and the admiration which his father had expressed at the idea, that thousands of lives would be saved by this one invention, had altogether worked up Harry's enthusiasm. Thoughts, which had been lying quietly at the bottom of his mind, were now set in motion, and thrown to the surface. His father knew him better than anybody else, his father was therefore the confidant he preferred to all others. Happy the son, who, in like circumstances, feels that his father is his best friend.

"Father," said Harry, "a few words you said to me, long ago, made a great impression on me. I have often thought of them since, and of something of the same sort which Sir Rupert said to me, at the time of the balloon, when we were talking of great inventions. Do you recollect, father?"

His father recollected, and spared him the difficulty of repeating the words. Sir Rupert had prophesied, that if Harry's application and diligence continued, he would hereafter distinguish himself as a man of science.

"Then I must tell you, father," continued Harry, "that I have long had, deep down in my mind, deeper, I believe, than anybody sees but you, a great ambition to make, some time or other in my life, some great discovery or invention. I have been long thinking of this, and considering how other people have succeeded. When I was confined to the sofa, I thought of it more and more; and particularly how I could manage my own mind so as to make it do what I want. In reading the accounts of the childhood of great or scientific men, I have tried to find out what they did and said, that I might compare my thoughts and ways of going on with theirs: but enough is never told of these things. On

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the other hand, father, when one thinks of the millions of people that exist, and of the few that distinguish themselves, it does appear very presumptuous to hope that I should succeed. How many people, when young, must have had the same feelings that I have now, and the same ambition; yet they have failed. But why have they failed? this is what I want to ask you, father. Another thing puzzles me," continued Harry, who could now speak fluently, his thoughts flowing on, and forcing themselves into words. "During our journey, when we were at the glasshouse, and when we read all about the discovery of printing; and since that time, when Sir Rupert Digby was giving us the history of electricity, and of the invention of balloons; and more lately still, in those books which I have been reading during my illness, I have continually observed, with surprise, how long it was before even the most ingenious men hit upon those discoveries and inventions, which, now that we know them, appear to us so easy and simple: and I have said to myself, if these things were so difficult to them, how little chance have I! Yet, father, I think people have a better chance now than in former times. More discoveries have been made in our days than in the time of the ancients."

"Yes," said his father, "because knowledge is more generally diffused. More people try experiments; and all are convinced, that this is the best method of arriving at truth, or of making discoveries."

"Still, father, I want to find out why, now that this is known, so few, among the numbers who try, succeed. I wish I could find this out, that I might learn how to secure the best means for myself."

"Some people," said his father, "are inaccurate in their mode of trying experiments, or rash in drawing their conclusions; or they may have some prejudice or favourite theory, which blinds the truth from them, and prevents their seeing what is before their eyes. Their failure arises from taking a wrong view of the object, or a wrong road to it."

Harry asked his father if he knew of any book that gives directions or advice how to get forward in science, or that points out the best ways of trying experiments. "I looked over much of that book of Locke's," said Harry, "to try if I could find any thing of this sort, but I could not. Is there any such helping book?"

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His father mentioned Bacon "On the Advancement of Learning;" Hooke "On the means of improving Natural Philosophy;" Playfair's "History of the Progress of Physical Science," and some others.

"Then, as soon as we get home and are settled," said Harry, "I will begin and read some of these—would you advise it, father?"

"I have such confidence in your good sense and resolution, Harry," said his father, "that I feel no apprehension of discouraging your laudable ambition by answering—No, I would not advise you to read any of those books *yet*. They would perhaps prevent you from working out your own observations, and from reflecting impartially, as you have begun to do, upon your own mind. I advise you then, my dear son, to persevere steadily and regularly in your present course. Never let any one day pass without advancing some step—without acquiring some fresh knowledge. Continue with your sister your happy practice of *Mutual Instruction*. Exercise your faculties, your memory, your reasoning power, your invention, no matter on what, so that you exercise them. They will strengthen, and we can afterward turn them and your habits of application to whatever may be necessary for your progress in science and virtue, and for your happiness."

"My happiness!" cried Harry, "the greatest possible happiness I can conceive in this world, next to doing my duty, would be to make some grand invention, some noble discovery."

To this he recurred; this was the chorus of all his thoughts. It was said with such enthusiasm as strongly to excite the sympathy of his father, who paused for some moments before he again spoke.

"I must not be misled by my hopes, or by yours, Harry," said he, "lest I should prepare for you bitter disappointment in future. Whether you may ever distinguish yourself or not, will depend probably on circumstances over which neither you nor I may have any control. But whether you do or do not succeed in the object of your ambition, you may certainly, my dear boy, by cultivating your taste for science, secure a large portion of happiness. You may become such a man as your friend Sir Rupert Digby. You see how useful, how respectable, how happy he is. You see that it is his taste for science, his indefatigable pursuit of knowl-

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ledge, and his constant exertions to be of use to others, which constitute his happiness—a species of happiness that is independent of all celebrity, and of all human applause. You have seen on what it depends—

> "Friendship, books,
> Ease and alternate labour, useful knowledge,
> Progressive virtue and approving Heaven."

Harry stopped, and looked back for Lucy, sorry that she had not heard these lines. She and his mother joined them soon afterward, just in time to hear the words with which his father concluded the conversation.

"I consider you, my dear son, as no longer a child, and I securely trust to your own efforts for the continuance of your own education. A celebrated person has observed, that every man has two educations—one, which is given to him by his parents or tutors while he is a child: the other, which he gives to himself when he becomes a man. This latter is of the greatest consequence of the two, and this, with every wise and good man, should go on to the latest period of his life."

Here ends all of the history of Harry and Lucy that is to be published.

The reader may perhaps feel relieved, by these words, from certain fears which may have arisen in his mind, that the said history might extend to a thousand and one volumes.

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LITTLE PLAYS

FOR CHILDREN.

THE GRINDING ORGAN.

DUMB ANDY.

THE DAME SCHOOL HOLYDAY.

THE GRINDING ORGAN

IN TWO ACTS.

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DRAMATIS PERSONÆ.

FARMER HAYNES.
MRS. HAYNES.
MRS. ROSS.
BESS, PATTY, LUCY, } Children of Farmer and Mrs. Haynes.
PRISCY, daughter of Mrs. Ross.
OLD MAN with Grinding Organ.

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LITTLE PLAYS

FOR

YOUNG PEOPLE.

[WARRANTED HARMLESS.]

"*Warranted Harmless*—That is one good point to be assured of before we put plays into the hands of our children," says a mother, looking at this book in the bookseller's shop.

"But mamma," says her little girl, "are they entertaining?"

"Ay, mamma, are they entertaining?" repeats her brother: "I never will read them, unless they are warranted entertaining as well as harmless. Of all things, I would never read plays, unless they divert me; what else are they good for?"

"Nothing, certainly. I want to see whether they look entertaining," says the little girl, "but I cannot yet, for mamma is reading the preface; and you know, brother, you never like prefaces."

"Never. They always are stupid, and tell us that every book is entertaining—there's no believing them. Besides, they are always so long."

"This is short, at any rate,"—says the little girl, peeping at the pages over her mother's shoulder.

"Well!—what does it tell us?"

"It tells us, in the first place, that these plays were written at"

"No matter where, my dear."

"Many years ago; in the year....."

"No matter when, my dear."

"They have been lying by nine years and more....."

"No matter for that either; though I know it is Horace's old advice," says the boy: "but that will not make the plays divert us the more if they are not diverting."

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"They were originally written," continues the little girl, "for the amusement of a private family."

"I don't care for whose amusement they were originally written. I do not know why authors always tell us *that*."

"But listen, my dear! they were read to the young people they were written for on their birthdays!—Oh, brother! oh, mamma! I should like to have a play read to me on my birthday."

"If it was entertaining, I suppose you mean," persists the sturdy boy; "for plays being read on all the birthdays in the world would not make them entertaining if they were tiresome."

"Certainly, brother. But listen, my dear, not one of the audience fell asleep, the author says....."

"*The author says?*—Ah! but perhaps, without the author's seeing it, some did sleep. I know I have gone to sleep when people were reading very grand things."

"But not plays, brother."

"Yes, even plays, when *read*,—I do not mean *acted*. Acting plays I always like."

"Some plays, they say, are good only for reading."

"Those, I say, are good for little or nothing to my mind," says the boy: "and if these are of that sort, I will have none of them."

"Listen, brother—one of them has been acted."

"*With unbounded applause*, does not the author say? that always comes next."

"No; here is nothing about unbounded applause: but it says, that the little play which was acted made people laugh."

"Laugh! really laugh!—then it might do for us, my dear. Which of them was acted?—what's the name of it?"

"I do not know; the preface does not tell that."

"Prefaces never tell the thing one wants to know;" says the boy.

"But mamma will look over the plays for us," says the little girl, "and see which will do for our acting."

"I should like to look them over for myself," said the boy.

"Do so then, my dear," says the kind mother, putting the book into his hands.

"But we cannot judge, without reading them all."

"Read them all, my dear, then," says the mother;

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"that is just what the author desires, that young persons should read, judge, and decide on these plays for themselves."

"I like that!—that is what I like!" cried both the little critics, drawing up their heads, while their mother read to them the last words.

"It is for young readers to determine whether these little plays are amusing or not. They—and they only, can pronounce the sentence which the author most wishes to add,

WARRANTED ENTERTAINING."

May, 1827.

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THE

GRINDING ORGAN.

IN TWO ACTS.

SCENE I.—*Enter Bess.*

I WISH little Lucy would make haste and bring the basket of flowers, that we might fill mamma's flower-pots. I do love to do any thing for mamma, she is so good; and papa, too, he is very good-natured, though he is angry sometimes with aunt Ross, but then that is because she is ——, I must say it, though she's my own aunt, she is a very great scold, and cousin Priscy is just like my aunt, always cross. If it was not for that we should all be so happy!

SCENE II.—*Enter Lucy with a basket of flowers.*

Lucy. Look, look, sister Bess, look what pretty flowers I have gathered.

Bess. Very pretty! Bring me the flower-pots: there they are on that table: take care, bring one at a time, else you'll break them.

[*They begin to put the flowers in the flower-pots.*

Bess. I hope Priscy won't come to take away our pretty flowers: peep out, and look if she is coming.

[*Lucy goes to the door, and peeps out, then returns to Bess.*

Lucy. Oh! here she is coming. Take care of the flowers and take care of me! Oh! take care of me.

SCENE III.—*Enter Priscy.*

Priscy. Now, Miss Lucy, I've found you out: why did you run away from me just now, when I asked you

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for some of your flowers? Tell me that. Why wouldn't you give me the rose I wanted? Answer me that.

Lucy. Because the rose is for mamma. I told you that, cousin Priscy, and I spoke very civilly, and you were very cross—and this was the face you made; and you began to cry.

Priscy. Cross! I say I will be cross if I like it, and I will cry if I like it—(*beginning to cry*).

[*Lucy with her own pocket-handkerchief attempts to wipe Priscy's eyes.*

Priscy. Don't, don't, I have a pocket-handkerchief of my own, I can wipe my own eyes. I have fourteen pocket-handkerchiefs, and you have only three.

Lucy. Have done crying—(*Lucy takes a rose out of her basket*). Look at this pretty rose, smell it—smell it, Priscy!

Priscy. Give it me, give it me this minute—(*tries to snatch it*).

Lucy. No, no, cousin Priscy, I can't give it to you: I will keep it for mamma.

Priscy. I will have it, I say.

Bess. Fy! Fy! This rose, Priscy, is not yours, you know—(*takes the rose*).

Priscy (*stamps*). I'll tell mamma, and she shall scold you both with a vengeance; and then how will you look, eh! Miss Crop the conjurer! how came you to cut your hair all off your ugly forehead, tell me that! And you, Mrs. Decorum, when did you swallow the poker? tell me that. Ay, ay, you find I have a tongue as well as mamma, so give me the rose, or I'll scold you again and again.

Bess. No, indeed, I will not for scolding; papa says scolds should have nothing good, but a good ducking.

Priscy. Then I'll roar till I make all our town hear me. Give me the rose, the rose! the rose! (*snatches the rose, tears it to pieces, and runs off.*) [*Exit.*

Bess. Oh fy! for shame, Priscy.

SCENE IV.—*Enter Farmer Haynes.*

Farmer. Why Bess, I say, where are you? Where is your aunt Ross and her cross daughter, Priscy, hey? Why didn't you go for your aunt when I bid you, eh?

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Bess. Papa, I did go, and I've been back this half hour.

Farmer. Well, go again, and bring your aunt, and your mamma, and all of them here quick.

Bess. Yes, papa, I'll be very quick. [*Exit Bess.*

SCENE V.—*Farmer, solus.*

Ay, this is always the way when a parcel of women and children are to be got together. One's out o' the way, and t'other's out o' the way. Patty runs to look for Bess, and Bess for Patty, and Lucy for them both. And then they have some jingumbob to put on, or some rag to finish, while I'm kept kicking my heels.

SCENE VI.—*Re-enter Bess.*

Bess. Oh! I have run—run—run myself so out of breath. I am hardly able to speak.

Farmer. Well, well, take breath, take breath, child. Thee hast run, indeed; and it's thee that always run'st for them all, but thee beest the best-natured gipsy in the world. Well, be they coming? what did they say?

Bess. Mamma said, "I'll come this minute, love;" aunt Ross said, "Well, child, go about your business;" and Priscy said, "La! what's the mighty matter?" and Lucy would have come, but Priscy would not let her stir without her.

Farmer. Ay, ay, the old trade; all think of themselves, and nobody thinks of me; well, then, I'll not think of nobody.

"There was a jolly miller once lived on the river Dee,
He worked and sung from morn till night, who was so blithe as he?
And still the burden of his song for ever did use to be,
I cares for nobody, no, not I, if nobody cares for me."

I wanted to have them all here while I read this here letter (*takes a letter out of his pocket*), but as they do'na choose to come when I do call them, they shall none of them have a glimpse of it this fortnight, so crack goes the seal!

Bess. Oh papa! won't you wait for mamma one minute? You know she's always ready, except this once.

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Farmer. Hands off! hands off! no coaxing; I'll not stand here like a fool for nobody, not I.

Bess. Here's mamma, just in time.

SCENE VII.—*Enter Mrs. Haynes.*

Mrs. Haynes (*with a covered dish in her hand*). My dear, I am sorry I've kept you so long waiting.

Farmer. So am *I*, my dear!

Mrs. Haynes. But your dinner was not quite ready, which, to be sure, was my fault; but I hope it is good now! set the table, Bess.

Farmer. Pshaw! pshaw! I don't want my dinner; it's a strange thing that a woman can never come when she's called, but must always wait for something or other. I didn't want my dinner. I won't have it, I say.

Mrs. Haynes. Well! well! don't fret about it, at any rate, and I'll be sure and come the minute you call me another time. Bess, take these things away.

[*Exit Bess, taking away the dish.*

Farmer. What's the matter with that there hand that you've got wrapped up there?

Mrs. Haynes. Only a scald I gave myself in my hurry.

Farmer. A scald! and on account of me! What a hasty fellow I am! What man like me would have such a wife as this, that he can never scold with any reasonable satisfaction, but must find himself in the wrong at last! I should have been buckled to such a dame as Widow Ross. Ay, it would not hurt a man's conscience to scold her, for she could give him back his own, and to spare.

Mrs. Haynes. Hush! hush! here she comes; now don't quarrel with her, love.

Farmer. No! no! I'll be as tame as a lamb; you shall see how pretty behaved I'll be—(*Mrs. Haynes puts by the table*).

SCENE VIII.—*Enter Mrs. Ross.*

Mrs. Haynes. Mrs. Ross, you're welcome.

Farmer. Mrs. Ross, you're welcome. I've been here waiting for you with the patience of Job.

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Widow Ross. Waiting indeed, and if you have been waiting, I could not come, not I, any sooner. There was not any man ever born could wait a minute for anybody. And after all, pray what is it you want of me in such a hurry? If you have any thing to say, Mr. Haynes, say it, and let me go.

Farmer. Very true; there never was a woman born that could wait a minute for anybody.

Widow Ross. What's that you say, Mr. Haynes? It's not very polite to repeat people's words to their face, Mr. Haynes! But what should some people know of politeness? I can tell you, cousin Haynes, it's your own fault that you stand like mum chance there, and that your husband is so ill-mannered; I'd teach him better manners if I was his wife; but if a woman can't speak for herself, I want to know who'll speak for her; and if she won't fight for herself, who'll fight for her!

Mrs. Haynes. I neither want to fight for myself, or to have anybody fight for me.

Widow Ross. Indeed, that's your maxim, is it? I made my husband, poor dear Mr. Ross, understand quite another thing before we were married twenty-four hours; and if you'd listen to me, Mrs. Haynes, I'd teach you secrets worth knowing; but you've had a larn'd education, and I should not presume to talk to you; yet I'd be glad to know what's the use of an education, if it does not teach us how to have the upper hand?

Mrs. Haynes. I don't want to have the upper hand, cousin Ross, but to make myself and my husband happy if I can; and as you upbraid me with my education, I must say that I have learned from it that *she* is the best wife—

> "Who never answers till a husband cools,
> And if she rules him, never shows she rules."

Farmer. Ay, widow, wife's in the right, and here am I, all alive and kicking, to say so. And now, Mrs. Ross, as thee hast said all thee hast to say, let me read you this here letter from our cousin, Captain Brown.

Widow Ross. Bless me, let's have it! They say he's grown a great man, and very rich.

Farmer (*reads a letter*). "My dear cousin Haynes, as I have received a legacy left me by my rich uncle, I have quitted the army since the peace, and mean to spend the rest of my life in retirement among my friends

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in my native village. I have provided all that can be wanting in the way of furniture to make a house comfortable; you will therefore be so good as to look out for a lodging for me, which I will pay for handsomely."

Widow Ross. Oh la! he shall come to my new house! No house so suitable as mine; 'tis the best in the whole village; and as it is not quite furnished, this arrangement will *shute* all parties.

Mrs. Haynes. I'm sure our house is not good enough for Captain Brown, I wish it was.

Farmer (*goes on reading*). "Pray take care and don't engage for me to lodge with any scolding woman or cross children, for such I cannot abide." Humph!

Widow Ross. Read on, Mr. Haynes, if you please.

Farmer. It may not be so agreeable; but if you desire it, cousin—

Widow Ross. I do desire it, sir, and insist upon it.

Farmer. "It is many years since I saw either of my cousins, your wife or Mrs. Ross. I remember when we were children, I used to call one Concord, and the other Discord; but people change as they grow up, and they may, for all I know, be both in harmony.

"Yours, &c., R. BROWN."

Widow Ross. No doubt! no doubt we shall be all in harmony.

Farmer. Oh, she can be as sweet as anybody when she do choose.

SCENE IX.—*Enter Bess, running.*

Bess. Oh! pa, and ma, and aunt Ross, the wagon is come in, and is quite full of chairs, and tables, and beds, and chests of drawers, and iron pots, and tin kettles, and boxes, and hampers. The wagoner says they are all directed to you and Mrs. Ross, and one hamper, with *china* written on it, is directed to you, papa.

Widow. They shall all be taken to my new house. We'll go and see all these fine things.

[*Farmer and Mrs. Ross exeunt.*

Mrs. Haynes. I would rather see my cousin himself than all these fine things! Bess! do you stay here, child, and take care of the house till I come back: here are the keys. [*Exit.*

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Bess. I wonder what keeps Patty! and Lucy ought to be back from school before this time

SCENE X.—*Enter Lucy and Priscy.*

Bess. Well Lucy! where's Patty?

Lucy. I don't know what is become of her.

Bess. And what brings you here, Priscy?

Priscy. I hear, Miss Bess, that you are left in care of the house; I want to see what kind of a housekeeper you'll be. Will you be so obliging as to give me some of the raspberry jam your mother made last summer?

Bess. Cousin Priscy, you know it is not mine to give you; when mamma intrusted me with her keys, she took it for granted that I would not touch the sweet things.

Priscy. La! you are so precise, you'll die an old maid!

Bess. If I do, my dear Priscy, I'll take care not to die a thief!

Priscy. Thief! do you call me a thief? It is none but poor wretches that are thieves; and I'd have you to know that I am no poor wretch, whatever you and your hard-working sister Patty may come to. Well, miss, if you won't give me some raspberry jam, I know where to get some: my aunt Haynes put some on the shelf yesterday, and I'll have it.

[*Goes towards the shelf, and Bess pulls her back; but Priscy pushes Bess down, and climbs up to the shelf, which falls, and all which is on it comes down with a great crash.*

Bess. Oh! Priscy, what have you done?

Priscy. I've done nothing, Miss Bess; I've undone something, if you please.

Enter Patty.

Patty. What's the matter? what's the matter! Oh! Priscy, what mischief is all this?

Priscy. It's all Bessy's fault; she would not give me any raspberry jam, though I asked for it very civilly.

Patty. Well, let us take up the things, and tell mamma the truth. And I have some good news to comfort you; there's something coming that you'll like to see and hear.

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Bess. What is it, sweet smiling Patty?

Priscy. Why can't you tell at once?

Patty. Such a delightful old man!

Priscy. An old man, and is that all?

Patty. With something on his back.

Priscy. A hump, I suppose.

Patty. No, but a wonderful box, which music comes out of when he turns the handle this way—(*turning her hand*).

Bess. Oh! you mean a grinding organ, here it comes.

SCENE XII.—*Enter an old man, playing on a grinding organ, and singing.*

SONG.

(*To the air of Liber Augustin.*)

"Come all the young hearts, to good humour in tune,
Come round me, my darlings, and I'll please you soon;
Come all that can dance, and come all that can walk,
Come all that can listen, come all that can talk."

(*He stops and takes breath.*)

Patty, Lucy, and Priscy, exclaim in different tones—

Oh! go on!

Oh! go on!

Go on!

Old Man. Patience, my little dears, patience; I must take breath before I can go on. You who are young can sing and run all day long. So could I once, but that is many, many a year ago, lackaday! Now I am old, and a little thing does tire me, and I have come a great way to-day, and this here box on my back is no help to me.

Bess. Here, rest yourself, poor old man—(*old man sits down*).

Patty. Here's a stool to set your box upon—(*pushes the stool towards him*).

Bess. Priscy, why do you stand there with your finger in your mouth?

Priscy. I choose to stand here with my finger in my mouth. Well, what stops you, old man? Go on. Can't you sing any more?

Old Man. Miss, I must take breath, if you be pleased to let me.

Patty. Oh yes, let him take breath; nobody can sing

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without breath, and he is *very* old, *pretty* old, I mean. It is rude to tell people they are *very* old.—What white hair you have, old man; *pretty* old man, I mean, and what a long beard! (*turning to Bess*). But, poor man, has he no razor? I'll ask him.

Bess. No, no, that would not be civil; he'll shave on Sunday, I dare say.

Priscy. Come, come, what are you gabbling about there? Let the old fellow sing if he can; he has as much breath now as he ever will have.

Patty (*caressing him*). Will you be so good as to go on?

Old Man. Yes, my pretty little civil miss, for *you* —(*kisses her hand*).

(*He sings.*)

I.

"Come all the young hearts to good humour in tune,
Come round me, my darlings, and I'll please you soon.
Come all that can dance, and come all that can walk,
Come all that can listen, come all that can talk.

II.

"Come all that have ears, and come all that have none,
Come all that love music, come all that love fun;
For lovers of music, and lovers of noise,
I've a soul full of music, and box full of joys.

III.

"I've lungs that can compass each song you desire,
An organ can play, till your little legs tire.
Come choose then your ditty, I know twenty score,
And when I've sung those, I can sing twenty more."

Bess and Patty. Thank you, good old man.

Priscy. Thank you for nothing, say I.

Patty to Bess. But what does he mean by "choose your own ditty?" What's a ditty?

Bess. A ballad—a song. If I were to choose, of all things I should like the old ballad papa used to sing long ago to us—

"O the golden days of good Queen Bess."

Old Man. I know it, miss—I know it—and you shall have it, my dear—I'll set my organ to it for you.

[*Turns to the tune of "O the golden days of good Queen Bess."*

Is this it?

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Bess. Yes, yes, the very thing!

Priscy. She asks for it only because Bess is her own name, and I'm sure it will be some stupid thing, I'll not listen.

[*She stands sulkily; the Grinding Organ Man plays, and sings to the air of Ally Croker.*

"Come listen, my good neighbours
And deem it not a mystery,
If we jumble together
Music, poetry, and history.
The times to display,
In the reign of Queen Bess, sir,
Whose name, and whose memory,
Posterity may bless, sir.
Oh the golden days of good Queen Bess!
Merry be the memory of good Queen Bess!

"Then our streets were unpaved,
And our houses all were thatched, sir,
Our windows were latticed,
Our doors only latched, sir;
Yet so few were the folks
That would plunder or would rob, sir,
That the hangman was starving
For want of a job, sir.
Oh the golden days, &c.

"Then our ladies with large ruffs,
Tied round about their necks, sir,
Would gobble up a pound of beefsteaks for their breakfast,
While a close-quilted coif
Their noddles just did fit, sir,
And they trussed up as tight
As a rabbit for a spit, sir.
Oh the golden days, &c.

"Thus renowned as they lived
All the days of their lives, sir,
Bright examples of glory
To those who survive, sir,
May we, their descendants,
Pursue the same ways, sir,
That King George, like Queen Bess,
May have his golden days, sir.
And may a longer reign of glory and success
Make his name eclipse the fame of good Queen Bess."

Priscy. Well! is that all? I thought there would never be an end of it. Can't you sing any song but one?

Old Man. I have more songs, but I'm apt to forget the words.

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Priscy. Stupid! I hate people who can't remember the words of their songs.

Old Man. Ah! miss, don't hate me for the fault of my memory; my memory is failing me sadly; I'm growing very old.

Priscy. So I see! But try and brush up your memory, and give us another song, or I'll give you no money; and I've a whole sixpence in my pocket.

Old Man. I had a *ma-any* songs once, but I've forgot them all.

Priscy. Forget them all! Dunce!

Old Man. Young lady, I've forgot more songs in my life than you'll ever remember.

Priscy. Saucy! Will you play then, since you can't sing?

Old Man to Patty. Little miss, come here, and I will show you how to play the organ.

(*Patty grinds, the old man pats her head.*)

Patty. Oh! how nice—Oh! hear me, hear me!

Priscy. Let me do it, let me do it—I can do it fifty times better than you—(*Priscy turns the handle the wrong way*).

Old Man. That's the wrong way, miss.

Priscy. I tell you that's the right way, and I'll do it my own way.

Bess (*stops Priscy's hand*). You must not, indeed; you'll break it.

Priscy. And if I do, what will it signify?

Old Man. It signifies a great deal to me, miss.

Bess. Yes; for do you know this poor man earns his bread by playing on this organ; and if you break it, he won't be able to earn any money, or get any thing to eat. So, Priscy, my dear, come away. Let it alone, and don't break it.

Priscy. Break it, indeed! And if I do break it, my mamma is rich enough to pay for it. Look yonder, old man, do you see that new house at the end of the village? That's to be our house, and mamma will have done with keeping a shop; for mamma can't abide the smell of the shop, nor I neither.

Old Man. Very likely, miss.

Priscy. So, you see, if I break your grinding *thing*, I can pay for it.

Old Man. Very likely, miss; but still I would rather you did not break it, if you please—so I must take it from you—no offence!

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Priscy (*stamps*). Nasty, vile old man! I wish you were hanged and quartered.

Patty. Hanged and quartered! Oh, Priscy! do you know what it is to be hanged and quartered?

Bess. Fy! fy! Priscy, hanged and quartered: pretty words for a young lady! and how could you be so very naughty as to stamp at an old man: you know we should always be respectful to old people. Uncle John says so, and mamma says so.

Priscy. Uncle John says so because he's as old!—as old! as old King Cole; and your mamma says so because she's a goose.

Patty (*lifting up her hands and eyes*). My mamma a goose!

Bess. Your own aunt a goose! But you're in a passion now, so I'll not be vexed with you.

Priscy. I'm not in a passion (*stamps*); I'm not in a passion; I in a passion indeed! I never was in a passion in my life! I'm no more in a passion than you are, Miss Saucebox.

Patty. Not in a passion! Oh, look at her, as red as a turkey-cock!

Bess. I wish I had a looking-glass to show her her own face.

Priscy. Here's a basin of water that will do as well.

[*Throws water in Bess's face—then turns quickly and gives Patty a box on the ear.*

I'll teach you to laugh at me, so I will.

Bess (*wiping her face*). She has washed my face nicely for me, and I love to have a clean face.

Patty (*holding her hand to her ear*). Such a box as she has given me on my ear!

Old Man (*aside*). A rare vixen! and so young! Such a fury at five years old; what will she be at fifteen! (*aloud.*) Oh fy, miss! But come, I'll sing you another song to put you in good-humour.

Priscy. I don't want to hear any of your foolish songs—I dare say it will be abominably vulgar; but there's Patty, the ballad-singer, may stay and squall along with you if she pleases. I shall go home to mamma, and drink tea in the parlour—so good evening, tag-rag and bob-tail. [*Exit Priscy.*

Old Man (*to Patty*). Since you can sing then, little miss, will you sing me a song, and I'll give you another, and teach it to you.

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Bess. Oh yes, she will—she always sings the minute she is asked.

Patty. What song shall I sing, Bess?

Bess. "Over the mountains and over the moors."

Patty sings.

"Over the mountains, and over the moors,
Hungry and barefoot, I wander forlorn;
My father is dead, and my mother is poor,
And I grieve for the days that will never return.

"Pity, kind gentlemen, friends of humanity,
Cold blows the wind and the night's coming on;
Give me some food for my mother, in charity—
Give me some food, and then I'll begone."

Old Man. Thank you, *my love*—I beg pardon for being so free—thank you, *little miss.*

Patty. My name is not *little miss*—my name is Patty, and sometimes Little Patty. Now will you sing me and teach me the song you promised me?

Old Man. And welcome, my smiling dear, if you'll let me take you on my knee.

[*Old Man takes Patty on his knee and sings.*

"When first I slipped my leading-strings,
To please her pretty Poll,
My mother bought me, at a fair,
A pretty waxen doll."

Now try it, miss.

[*He repeats the first line, and Patty sings it after him—then he repeats the two next, and Patty sings them.*

Old Man. That's not quite right, miss—(*he sings over again the two last lines, and she repeats*). That's very well. [*Goes on singing.*

"Such sloe black eyes and cherry cheeks,
The smiling dear possessed;
How could I kiss her oft enough,
Or hug her to my breast."

[*Patty sings this stanza after him.*

Bess. Very well, indeed, Patty, you've learned this very quickly.

Patty. Now, darling, pretty old man, sing another song.

Bess. Oh, no; consider he has travelled a great way to-day, and he must be tired and hungry. Let us go into the kitchen, and give him something to eat. Come

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of *our* suppers, at least, we can give him—can't we, Patty! I'll give him half mine.

Patty. And I'll give him half mine; I'll run for it directly. Come, my dear old man (*taking him by the hand*); but you can't run; we'll walk slowly with you, and show you the way.

Old Man. Sweet children! What is so comfortable to the heart of an old man, as to have good children about him! [*Exeunt.*

ACT II.

SCENE I.—*Enter Farmer and his wife with a large hamper.*

Farmer. Wife, I'm afraid this hamper has been too heavy for you.

Mrs. Haynes. Oh, not at all. I'm able, and I'm sure I'm willing, to do my share.

Farmer. If I had not looked sharp, the widow would have had the hamper. Did you hear how she scolded the wagoner about the furniture! and I could see no harm that was done to it—I ge'ed him a shilling to make him some amends. But where's the children, to see the china unpacked!

Mrs. Haynes. I'll call them—Bess! Bess! where are you! what are you about!

SCENE II.—*Enter Bess.*

Bess. Oh! mamma! there's been here a nice old man, with a grinding organ; and he has been playing and singing, and has taught Patty a pretty song. He's in the kitchen, mamma, where I took him, to give him some supper—I gave him half my milk, and Patty gave him half of hers, and so did poor little Lucy.

Mr. Haynes. You did right, my dear.

Bess. He's going away to look *for a bed.*

Farmer. Call him in, Bess.

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SCENE III.—*Enter Old Man, Bess, and Patty.*

Old Man. God save you, good madam and sir: your dear sweet children have been very good to me; but though there was plenty in the larder, they said they had no right to give any thing but their own supper.

Farmer. Ay; and by what you say, I am sure you would not take any thing from them but what they had a right to give. Sit down, while I unpack this here hamper.—(*Mrs. Haynes makes the Old Man sit down*). I'm sure, my fists were not made for handling such things: Heaven send I may break none of these crinkum crankums.

Bess and Patty. Oh! mamma! what pretty things they are! let me take out some more.

Farmer. Hands off, you baggages! go and set the table for tea. Wife, where shall I set these things? for thee knows best in all things.

Mrs. Haynes. As you ask my advice, my dear, I advise you not to unpack any more, till cousin Brown himself comes; and then, if any be broke in the carriage, he will see it his own self.

Farmer. Ay, so he will: thee beest the prudentest wife; and then, thee hast such a way of putting in thy word, one can't do other than as thee wouldst have one. (*To the old man*). Come, my good sir, your gray hairs sha'n't be sent out at this time o' night to look for lodging; that would not be what I call right or kind; so stay where you be.

Old Man. Thank you, sir.

Mrs. Haynes. Bess and Patty, get the things ready for tea. [*Bess and Patty prepare the things for tea.*

Farmer. Let us see, my old friend, what tunes you can play.

Old Man. But a very few, and please you; my organ here is none of the best, and can play none but very oldfashioned things. [*Gives a list.*

SCENE IV.—*Enter Widow Ross.*

Widow. Farmer Haynes! I've lost the hamper of china.

Farmer. Widow Ross! how can that be?—for you never had it to lose.

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Widow. I say, Mr. Haynes, I saw, with these eyes, the hamper of china at the crane, with the ticket, *china*, on the outside o' the hamper.

Farmer. Ay, widow; but the hamper of china was directed to my care; and yonder it *bees*, touch it who dare.

Widow. I dare, Mr. Haynes (*checking herself*), for I dare to say, cousin Haynes, if Captain Brown were here present, his self, he would so order it by word of mouth: and, at any rate, your own good sense, cousin Haynes, must show you, that the china will be safer in my house than here, where you've no respectable place to keep it in, and where you've got all these heaps of children sheltering about.

Farmer. Those children will do the china there no harm; for their mother there has taught them never to meddle with nothing as does not belong to them. Here the china is, and here it *shall stay*, widow.

Mrs. Haynes. Now, husband, you're wrong, indeed; do, my dear husband, let her have the china. Though my cousin may be a little angry now and then, you should not be so hard with her; and as to the rest, we don't want the china, or any thing cousin Brown has, except his good-will; and that, it's to be hoped, we shall have; because, no doubt, we shall try to deserve it; so set cousin a good example, dear husband, and don't be cross to her, but let her take the china, will'ee?

Farmer. Why, if she wasn't so cursed cross, I wouldn't be so stiff wi' her.

Widow. Oh, come, now, my good cousin; I ask it as a favour, and I'm sure you can't refuse me.

Mrs. Haynes. No, I'm sure you won't refuse cousin, husband; see how kind she looks at you now, husband.

Widow. Well, what say you? sure you would not be disagreeable.

Farmer. Now, she'd wheedle a bird off a bush, if it wasn't such an old bird as I; but old birds a'n't to be caught with chaff.

Mrs. Haynes. Oh, come, now, husband; now it is your fault if you are not friends; you see how kind my cousin looks at you now. Come, come, don't plague her any more.

Farmer. Yes, but I *wool*; for I don't like two faces under a hood. If you'd seen how cross she was wi' them poor wagoners just now: and it's always the

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way with her to them she's not afeard of. I have noticed the frowning face, and the cross voice, and the saucy toss she has for the poor souls, that do come in towards the close of the evening with their halfpence and their pence—(*mimicking Mrs. Ross*). "We don't sell ha'porths—we don't sell ha'porths here, friend—go somewhere else." But if a rich man or a fine dressed lady do come in, how smooth our face does grow in a trice, all smiles and simpers—"Me'em, I should be so proud to serve you—sir, if this don't *shute* your taste—me'em, be pleased to look at this—any thing in my power, me'em, I should oblige you." But none but a woman could do it to the life.

Widow (*aside*). Now I could beat him!

Mrs. Haynes. But only see how she bears even your mimicking, husband. See, I'm sure she's not cross now.

Farmer. No, not this very 'dentical minute. But now I'd engage, tho' she has a *pint* to gain, she couldn't keep in good-humour for one half hour together.

Widow. Oh, my dear Mr. Haynes, such a thought!

Mrs. Haynes. Oh, husband!

Farmer. Well, let us see then; saying's one thing and doing's another. Sit ye down here, Widow Ross, and let us see you keep in good-humour for one half hour together, and you shall have the china and my blessing. Now, there bees a fair challenge to a fair lady. (*Takes out his watch, and shows it to the Widow.*) There, see what it is by me,—one half hour, hey, Widow.

Widow. Ah, Mr. Haynes, you're a strange man, a'n't you? But you must have every thing your own way. Well, I take you at your word.

Farmer. Done, shake hands then, widow—(*they shake hands*).

Mrs. Haynes. Ay, do be friends, and I'll make you a dish of tea in a minute; we'll set the tea-things. Bess, run!—the kettle, love: and, Patty, bring the toasting-fork and toast us the toastesses.

Farmer (*puts on his spectacles*). Where's the list of them tunes you can play, my good friend? Let me see, let me see.

[*Looks over the list, while Mrs. Haynes, Bess, and Patty set the tea-things, and get the kettle and the toasting-fork. The Widow comes forward, looking at the Farmer, who examines the list, and seems to be speaking to the Old Man.*

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Widow. And does the fool think he can provoke me? No, no. I'll keep my temper, and win my wager, and win my china, and win. Captain Brown too when he comes. That brute now thinks that he can make me expose myself for a vixen afore cousin Brown. No, no! I'm too many for him there; I can keep my temper like an angel when I please. What elegant furniture Captain Brown has sent by the wagon! and I conclude my cousin the captain will live in the most splendidest style, and sport a gig—and me in it!—and I will drive! —and then such dinners as we'll give! and I sitting behind my own turkey, and eating off china. Oh! the china! I must have the china in the first and foremost place; so now I defy the farmer to put me off my guard.

Mrs. Haynes. Cousin Ross, the tea is ready, won't you sit down? Bess, set your aunt a chair. Cousin Ross, here's a seat.

Widow (*going to her chair, sees the Old Man*). But what's this; who have we here? Do you expect me to sit down to tea in the room with an old beggar-man?

Old Man (*rising*). I humbly ask the lady's pardon, I'll go, miss (*to Bess*), my good little misses, if you'll show me the way to the kitchen.

Farmer. No, no, he sha'n't stir a foot; he's under my purtection, and he shall have my purtection, as well as the china, widow.

Widow (*aside*). China! always harping on the china; (*aloud*) but I only say it's very odd to take one's tea in the room with a strolling vagabond.

[*The children gather round the widow, and beg for the Old Man.*

Patty. Oh! aunt Ross, he's not a vagabond; he's my pretty old man.

Widow. Pretty nonsense!

Bess. And look at his gray hairs and his white beard.

Widow. Well, I do look at 'em; but one a'n't obligated to drink one's tea in the room with all the old men that has gray hairs, in and out of the parish, is one?

Mrs. Haynes. Oh! sit ye down, cousin, and be agreeable—(*whispering Mrs. Ross*). Else, if you don't, husband will say you've lost your wager by getting out of temper: (*aloud*) see, the poor old man's sitting back out of the way as well as he can, and he'll do us no harm.

Widow. Well, everybody's to do as they please, and

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rule the roast at their own tea-table, and I'm quite agreeable; and you, Mrs. Haynes, that is so *petticklar* about your children, I'm only surprised you should let 'em consort with old begger-men. But I'm quite agreeable, since it must be so—(*sits down*).

Farmer. Ay, ay, you do well, widow, to be upon the agreeable order.

Mrs. Haynes. Now we're all comfortable, and I'll give you some good tea, to make you all more agreeable—(*Mrs. Haynes pours out the tea*). Cousin Ross, will you take your tea, here's the cream. I put sugar in. Is it sweet enough? Is the tea strong enough? I hope I've made it to your mind?

Widow. Oh, it's all mighty well, only it has no taste of tea; but I make no objections to nothing, *not* I.

[*Mrs. Haynes calls for Bess and Patty, and gives them a dish of tea.*

Widow. Indeed, those children do crowd one up so, there's no room for one's motions.

Mrs. Haynes. There, take your tea out yonder, Bess and Patty, love, don't be troublesome; and don't lean on your aunt Ross's chair.

Patty. My aunt Ross is so touchy there's no coming within a mile of her. I'm sure mamma will let me lean on her chair, and get up on her chair (*gets up*), and put my arms about her neck, and hang upon her as I like and love to do.

Mrs. Haynes. Oh, but don't quite strangle me, love.

[*Takes Patty's arms away, kisses, and puts her down.*

Go, love, go to your sister Bess, and keep her company.

[*Here the actors and actresses may put in any extempore tea-table talk they please.*

Farmer to Old Man. Now, my good old fellow, let's see what you can do for us. Come, sit forwarder, and strike up and sing out. Here, this here song.

Old Man (*sings and plays*).

"Mamma she would have me
To marry with Bell,
And awa with the lass
That I canna love well.
For though she is handsome
She's cursedly cross,

And if I should have her
I'd live by the loss.
But oh! that I had sic a lassy as this,
And oh! that I had sic a lassy as this,
I'd kiss and caress her,
I'd love and embrace her,
And think myself happier
Than Jove in his bliss."

[*Farmer joins in singing the last stanza, and the widow keeps down her rising anger. Farmer winks at Mrs. Haynes.*

Mrs. Haynes. Oh fy! That's not fair.

Farmer. Cousin Ross, how did you like that song?

Widow. Oh! vastly fine. But it is as old as Paul's.

Farmer. Well, gi' us somewhat that's newer, my honest friend. Let me look over the list for another to my mind.

Mrs. Haynes (*looking over his shoulder*). Here, let him sing.

"Oh! how pleasing 'tis to please."

Farmer. Thee should sing that thyself, wife! Yonder one knows nothing of that. Thee shall sing a song thyself to keep the widow in tune. Sing "At the brow of the hill." Thee used to sing that to me afore I was married.

Mrs. Haynes sings.

"At the brow of the hill a shepherdess dwelt,
Who the pangs of ambition or love ne'er had felt.
A few sober maxims still ran in her head,
That t'was better to earnere she ate her brown bread;
That to rise with the lark was conducive to health;
And, to folks in a cottage, contentment was wealth."

Old Man. Ah! mistress, if I could sing so sweetly, I need have no fear for my bread.

Farmer. Come, my old fellow, can you sing Daniel Cooper?

Old Man. No, master, I have not the words, but I can play it.

Farmer. Play away then, and I'll give ye words—

[*Farmer sings and dances. Mrs. Haynes tries in vain to stop him.*

——"Was a lady had a tongue,
Didn't know how to guide it,
Ran so fast, and ran so long
No mortal could abide it.

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Lady vowed and lady swore,
She *did* know how to guide it;
Tongue she'd hold for half an hour,
But tongue could not abide it."

Mrs. Ross. But tongue *shall* abide it, Mr. Haynes.

Children cry out, Go on! Go on! Papa, that's very droll.

Mrs. Haynes (*aside to the children*). No, don't vex your aunt Ross.

(*Farmer dances again, and sings.*)

"Put a curb upon her tongue,
And bid the jade go rightly,
But the jade would still go wrong,
She held the curb too tightly.
Curb that tongue had never known,
Didn't know how to wear it,
Tongue was old and restiff grown,
In truth it couldn't bear it."

Widow (*starts up angry*). Mrs. Haynes!

Farmer (*half bowing*). Mrs. Ross!

(*sings again.*)

"In truth it could not bear it."

Widow (*glancing her eye upon the china*) *aside.* I *will* bear it. Yes, my temper I will keep, and I'll win my wager, I'll have the china!

Farmer. Widow, I'm waiting your pleasure.

Widow (*courtesying*). Your most obedient (*sits down again*), nobody can say that I'm not quite agreeable.

Enter Priscy, roaring.

Priscy. Where's my mamma. Stand out of my way, children! I must see my mamma!

Widow. Here I am, here I am; who has affronted you, my child? I'll stand by you. Who has affronted you?

Priscy. The bread and butter, mamma,—there's no sugar upon it to-night, and I can't eat it, and you must come and give me some sugar, for it is locked up.

Widow (*aside*). A fine excuse to get away. Then I'll wish you a good evening, cousins, and I'll send for the china.

Farmer. Stay a bit—china, indeed! Stay a bit, madam, the half hour isn't over yet—(*pulls out his watch*). Ten minutes yet to run! So, widow, be pleased to sit down again.

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Priscy. She can't stay—she sha'n't stay—she can't stay, I say. [*Pulls and drags her by the arm.*

Widow (*aside*). But ten minutes longer, and then I'll burst out upon him—(*Priscy pulling still*).

Mrs. Haynes (*to Priscy*). Oh don't pull your mamma so, she'll go with you this minute. Here's a bit of bread and butter for you.

Priscy. I won't have it—(*throws it away*). It's not sugared.

Farmer (*picking it up*). What, throw my good bread and butter about this way!—(*takes Priscy by the arm*). Do you know, Miss Priscy, I've a mind to give you what you deserve richly—a good whipping.

Priscy (*frightened*). Let me go, let me go: mamma! mamma!

Widow. Oh! that I should live to sit quiet at this—But I will have the china!

Farmer. You'd best be quiet, Miss Priss, I say.

Patty. Do, Priscy; and the pretty old man will play a tune for us, and I'll sing for you.

Priscy. I hate your pretty old man, and I don't want to hear him or you either. Mamma, don't let him play any more on that thing; he's a saucy vagabond, mamma. Why don't you speak, mamma? What's come to your tongue, mamma?—(*drags her mother's arm*),

Widow (*aside*). Oh! how could I bind my tongue over to the peace. Now, sir, I tell you, he shall not play any more; I've won my wager; my time's out; and now, sir, let me tell you—

Farmer (*takes out his watch*). Stay, stay, not so fast; you go by me; I've five minutes yet to the good, sit ye still, widow, or china stays here. He shall not play any more, hey! sha'n't he! I don't understand that, madam. In my house I'm the master; play on, my good friend.

[*During this speech, Mrs. Haynes keeps Priscy quiet, and Bess and Patty give her tea, and try to please her.*

Play this here, about the man who had a dumb wife, and who got the doctor to cut her chattering-strings.

(*Old Man sings.*)

Her faculties she tries,
She stuns the house with noise,
And rattles in his ears like a drum, drum, drum."

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Old Man. Then he goes to the doctor "to ease him of his wo." I forget what he says, but the doctor replies,

"But I'll tell you what you'll do
For to ease you of your wo,
Take the end of a hazelberry rung, rung, rung,
Anoint her body round,
Till she makes the house resound,
And when the charm is over she'll be dumb, dumb, dumb."

[*The widow during this song makes sundry contortions of disdain, and writhes in the agony of suppressed rage.*

Farmer (*joins in singing*).

"And when the charm is over she'll be dumb, dumb, dumb."

Widow (*starts up furious*). Now I'll bear this no longer! Flesh and blood can't bear it! Farmer Haynes, you're the rudest, most ungenteelest bear in the parish; the greatest bear in all England, and a savage into the bargain. No one but a savage could behave so to a lady like me in his own house. To go for to set such a fellow as that upon me, sir! To take a strolling grinding-organ ballad-singer's part against me and my daughter Priscy, sir!

Farmer (*bowing*). Have you done, madam? Then now, wife, you'll keep the china. Widow, look what the minute-hand says, slow and sure, you've fairly lost your wager. [*Holds his watch to the widow.*

Widow. Have I so? I mind your watch as little as I do yourself.

[*Snatches the watch, and dashes it to pieces.*

Farmer (*picking it up*). So, so, so. The wisest man of us all can't foresee what a woman in a passion will do.

Priscy. That's right, mamma, that's right; and I'll do as much for t'other fellow's grinding thing.

[*Priscy springs from Mrs. Haynes, and flies at the organ.*

Bess. O, Priscy, stop! stop!—(*catching her*).

Patty (*running after her*). Oh, cousin! cousin!—(*hangs upon Priscy*).

[*Priscy struggles and tries to push them down, and at last throws down the organ.*

Widow. There's a lass of spirit—there's my own daughter!

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Old Man. Oh, miss! miss! have mercy, you have broken it—it's my all! my all!

Bess. She has broken it! Oh! Oh! Oh!

Patty. Poor old man! what will you do? I wish I could mend it for you.

[*While the children are busy deploring and picking up the organ, and the Farmer kneels down trying to set it to rights, the Old Man pulls off his disguise, and shows that he is Captain Brown: appears in his uniform, and comes behind Mrs. Haynes and the Widow while they are saying the two next sentences.*

Widow. Lord, what a noise about breaking a vagabond's organ.

Mrs. Haynes. Oh, but, cousin Ross, it's his all, consider; and he's not a vagabond.

[*Captain Brown claps the Widow and Mrs. Haynes on the shoulder, and looks in the face of each without speaking. The Widow and Mrs. Haynes start back, Mrs. Haynes with a gesture of pleasure, Mrs. Ross of fear. Farmer rises suddenly—children start up—all stand for one instant silent and astonished.*

Mrs. Haynes. Cousin Brown! my dear cousin Brown!

Widow. Captain Brown! May I believe my own eyes!

Farmer. Cousin Brown, you're welcome home, shake hands. [*Children crowd round Mr. Brown.*

Bess. Cousin Brown! But is it cousin Brown?

Patty. Is it really cousin Brown? Sir, are you cousin Brown?

Widow. So you don't know cousin Brown when you see him.

Patty. But how did you come? did you come by the wagon, with the china and the furniture?

Bess. No, no; look, I've found out how he came; look at these things!

Patty. So you're not my pretty Old Man! My goodness! and here's his white hair that I stroked, it's all a wig! only think! and his long beard! Oh! look (*holds it before her chin*), it was tied on so!

Bess. And his old coat—(*holds it up*). Well, I really took him for an old grinding organ man.

Widow. So did I, lud forgive me!

Farmer. So, widow, this is the strolling vagabond you

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would not let sit in the room with you, the beggar-man you would not have the children consort with, hey! and he has heard all, widow, and this is none o' my doing—innocent as a lamb, wife—all your own doing, widow—as you brew so must you bake.

Mrs. Haynes. Oh! don't taunt her now.

Widow (*not minding the Farmer, goes to Mr. Brown*). La! Captain, but I'm sure you're above taking offence or exceptions at any thing as passed when I did not know you was my relative. I'm sure I did not know you from Abraham. Who'd have thought of your being a gentleman, and a captain, and *petticklarly* Captain Brown, in that there queer disguise. And what could make you come upon us all in this strange sort of way?

Mr. Brown. A very simple motive, Mrs. Ross; I wished to satisfy myself about the real tempers of those with whom I am to pass the rest of my days. And I am satisfied, quite satisfied, Mrs. Ross. Even in the finest new house in the village, and with the finest lady, I beg to be excused from living, since I see what sort of harmony I must expect—you know I declared I had a particular objection to crying children, Miss Priscy.

Priscy (*crying, hides her face with Mrs. Ross's arm*). Oh! oh! oh!

Mr. Brown. So, cousin Discord, fare ye well; and now, my sweet cousin Concord, I hope you will let me live with you; and I will endeavour to add as much to your happiness, as I am sure you will to mine.

Mrs. Haynes. Oh, cousin Brown! we shall be glad to have you live with us. You were so kind to my children too; I see you're as good-natured as you used to be when you were a boy. Well, my dear husband, we shall all be so happy, only I'm sorry our house is really not good enough for cousin Brown.

Farmer. Cousin Brown, you see, my dear, is one that thinks more of the folk that's in the house, than o' the house itself, and I like him the better therefore.

Widow (*aside*). La! how long will they go on palavering one another, all to fret and vex me. Oh! why didn't I find out that it was Captain Brown sooner! To lose furniture, and china, and gig, and husband, and captain and all! But I won't give that brute of a farmer the satisfaction to see it: I'll put a good face on the matter to the last.

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Farmer. Where are you now, widow?

Widow. Where am I now? gone! gone! gone! never to set my foot in your hypocritical house again: Come along, Priscy.

Priscy. Oh! mamma. It's all your fault, all your fault. [*Exeunt Widow and Priscy.*

Widow. My fault, saucebox!—(*slapping Priscy on the back*).

Farmer. Now we shall have some chance of peace, and belike may hear our own ears again. Hark! what's cousin going to say to our Bess?

Captain B. My dear good little children, in the whole course of my life I never ate a supper I liked so well as that you gave me. (*To the Farmer and Mrs. Haynes.*)—From the first moment I saw your Bess, and Patty, and little Lucy, and compared them to Miss Priscy, I knew what their parents must be. Indeed, we may always judge of the parents by seeing their children.

END OF THE GRINDING ORGAN.

Written May, 1808.

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DUMB ANDY.

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DRAMATIS PERSONÆ.

MRS. BRIDGEMAN.
MARGERY, wife of Robin.
WINNY BRANNIGAN, wife of Watty, a beggar.
BESS, daughter of Mr. and Mrs. Bridgeman.

MR. BRIDGEMAN.
CÆSAR, JOSCELIN, } sons of Mr. Bridgeman.
ROBIN, Mr. B.'s gatekeeper.
WATTY, a beggar.
DUMB ANDY, a beggar boy.
GEORGE, a footman of Mr. Bridgeman's.

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DUMB ANDY.

ACT I.

SCENE I.—*A porter's lodge belonging to Bridgeman Castle. Margery Woods and old Robin her husband at supper. A stool between them, on which is a large bowl of potatoes and some milk.*

Margery. Robin, dear, the handle's toward ye, take the cup. The milk is fresh from the cow, and I milked her myself.

Robin. Then it's as good as cream to my liking, Margery, love.

Margery. That's well. I'm thinking, Robin, how it's forty good year, come Holantide next, we've been this ways, we two, taking our bit and sup together, and not a cross word or look ever came betwix' us.

Robin. Not one; no, nor the shadow of the like. Thanks to you, Margery, and myself too, that had the luck to get such a wife. Praise be to God for it!

Margery. Why then, Robin, I wonder now is there many score of the great folk in the county, let alone the kingdom, who could say as much?

Robin. Any way, there's our own master and mistress above at the castle might say as much for themselves, was they as good an age as we two, Margery. I don't doubt but they're as happy in the castle as we in the cabin; but it's not always so.

Margery. Well, they desarve it, for it's they that are good to the poor and kind to all, to my knowledge; and I never got asleep without remembering them next to yourself, Robin, in my prayers; the housekeeper too, she shall have my good word in heaven, was it only for the care of the asthma she gave you, Robin, though it did you no good, my poor man.

Robin. But that was no fau't of hers; sure it was the same bottle she took herself, God bless her! and the

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childer too. Well, aren't they fine childer, and good childer?

Margery. No better ever lighted up the mother's eyes.

Robin. Sorrow better! the mother might well be proud of 'em.

Margery. Even the little cratur itself, Master Jos. See yonder, in the corner, all the chips he gathered for me to make us a bright blaze at night, Robin; and Miss Bess too, who had the thought to pull all them rushes for the candles for us; and Master Cæsar! ay, that's the clever little fellow that will be the very *moral* of his father, Lord love him! See here how he mended my bellows for me, and was kneeling and hammering at 'em till myself was ashamed.

Robin. To my thinking them bellows are better than new again. It was a pleasure to him, I'll engage, for he has a kind heart, and a good big one too of his own in that little body of his. (*A bell rings.*)

Hark! there's the gate bell.

Margery. Sit you still, Robin, it's I will answer the gate. [*Exit Margery.*

Robin. Why, she's as young and supple on her foot as when first I danced with her for the cake at the pattern on the green. Ay, it's good-will that keeps the foot supple and the heart strong.

(*He sings to the air of Langolee.*)

I.

"Oh! the quick thought of woman to help us in all things;
Not a turn of life's troubles but what she can ease;
Still the worst she can lighten, and laugh at the small things,
And still what she does, it is all done to please.
Dear joy of my old days! Warm pulse of my heart's life!
The blessing you've been, and the blessing you'll ever be.
None knows, Oh! ma Vourneen! Oh! Madgy, my own wife!
None knows all you've done, all you're doing for me!

II.

"All the times that I've felt you my fond heart relieving,
There's none knows but me, darling, none knows but me;
And the soft word for anger, the hope-look 'gainst grieving,
No, there's none knows but me, dear, that knows them from thee!
Now thinking it over, the heart-swell I'm taking,
Till my tongue it can't tell it, the faint voice is lost—
Then sooner than speak it, my heart would be breaking,
Oh! 'tis he can worst tell it that feels it the most!"

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Robin (*to Margery, as she returns*). Well, Madgy dear, what was it? Who was in it?

Margery. 'Twas only a parcel of them beggars that wanted to know could they get through the gate up to the castle, and I told them no beggars was allowed inside the gate any ways, but if they had a paper I'd send it up for them to Mistress Lovemore, the housekeeper, for the charitable ladies. But they had no paper, or petition, or certificate at all, though the woman said she had been burnt out; now if she was burnt out, why had not she a paper to show, with names as usual?

Robin. Troth, that did not look honest.

Margery. And then, too, besides, another thing, the ould man, though he was by way of being blind, *axed* me was that white house on the hill the parson's or the priest's.

Robin. Then that was a slip of the tongue; but the woman might have *insensed* him it was a white house.

Margery. No, Robin dear, you're always too good; the woman was with her back to it, and had never noticed it; she turned her round that minute to look for it through the trees, and by the same token she hit me a great thump on the head with one of her childer's heads that was on her back, and, Lord forgive me for the thought if I'm wrong, but I could not help thinking to myself, when I heard the child did not cry, and felt the sort of a thump its head gave me, That child's no more a child nor I am, nor flesh and blood at all, but wood, or stone, or the like, dressed up to cheat Christians charitably inclined, which is a shame, you know, Robin dear. Lord forgive me if I'm wrong!

Robin. Amen. Then that would be a shame and a sin; but I can't think they would venture to be so wicked in the country. The Dublin beggars, they say, have a many tricks with them—but not in the country, sure.

Margery. Well, I can't take upon me to say; I *ax* their pardon if I wronged them any way; but they have taken themselves off, and I'm not sorry for it, for I did not like the looks of them much, any of the *kit*, barring a boy they had with them, that did not say a word good or bad, but looked very pitiful, and my heart warmed to him, and I had a mind to bring him in to give him a hot potato and a draught of the buttermilk.

Robin. Oh, then, that was like you, and why would not ye?

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Margery. Why, Robin, because I was not you, nor ever was half so good! and sure enough, the thump on my head I b'lieve made me crosser than I ought to be in *rason;* but it's past now, and no more about it! I must be going to look after the white cock that has taken an ugly fancy to roost down in the tattered barn at Killoguenesawce—(*Margery puts on her cloak*).

Robin. Then I wonder he would, when he has every convenience here and at home that a cock could want. Well, I'll be weeding a bit before the door while you're away, Margery, it's so lonesome to be sitting idle Where's my weeding-knife?

Margery. Here, and take your straw mat to kneel upon, Robin; I won't have ye forget *that*, or the knee will get the rheumatis again. God bless it and you till I come back! [*Exeunt.*

SCENE II.—*An old barn, beggars,* viz., *Watty Brannigan, seemingly an old man with a long beard; Winny Brannigan, with a large bundle on her back, the heads of two infants peeping out at the top. She carries a kettle in her hand. Andy Dolan, a boy, follows her.*

Winny B. Bad luck to the ould woman, then, at the gate, that would not let us into the castle.

Watty B. Tut! what matter, sure we'll find a gap in the hedge; I warrant we'll get over the ditch or the wall asy; there never was ditch or wall yet I wouldn't get over wi' pleasure, and I'd rather, too, than be beholden to a gate or a gatekeeper, that's always saucy and purse-proud, more or less.

Winny. Andy, dear, help me with these childer off my back. That was an unlucky thump the child's head gave that awkward old woman. I was afraid of my life she'd have suspected something, so I pinched Sukey, the live twin sister, to make her cry. Come then, darling Sukey, till I give you something to eat. Andy, throw the wooden child from ye. Sukey's jealous of her, and won't eat till the other's out o' the way.

Watty. Andy, get you to the door now, and mount guard for us; mind and give us notice the minute you'd see any one at all coming.

[*While Winny Brannigan is feeding her child, Watty Brannigan is taking off his beard.*

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We may rest us here a while, and better do so to give time for them to think us gone clear off. Well, it's a mighty tiresome thing, this being an ould man, though you think little of it, Winny Brannigan, and being to be blind into the bargain.

Winny. And a very bad blind man you are, Watty Brannigan, as ever begged the road! What made you *let on* that you saw the white house on the hill?

Watty. What matter! sure, I *heard* of the white house! And if you go to crossness, Winny Brannigan, I'd tell you a piece of my mind, that you'll be the ruin of us all one of these days, with those two twins that you *will* have, right or wrong.

Winny. I must have twins, and I will, Watty Brannigan. There's nothing at all moves the quality so much as a poor cratur with twins.

Watty. Ay, if she's a widow and they be orphants. But the mother must always be a widow-woman.

Winny. Well, and I've no objections in life, Watty Brannigan, to being a widow.

Watty. All in good time, Winny. But, in the meanwhile, where's my wooden leg? Give it me till I fasten it on, smart.

Winny. Your leg! I have not it at all, Watty. I had no say to it—(*her child cries*). Hush, hush, honey! Then troth, here's the leg in the bottom o' the bundle. And what manner of man are you going to be now, pray, Watty?

Watty. What should I be but a disabled soldier? Sure, didn't we hear at the public house there abow, that the quality at the castle are related somehow, or connected someways, or mighty cronies of the Dutchess of Wellington; and the duke's all the go now; and sure, they cannot but give half a crown after the battle of Waterloo to a disabled soldier like me.

Winny. Waterloo's too racent; you'd better have been at the battle of Vimeira.

Watty. Or at the burning of Moscow. But the duke was not there, was he? Burn me! if I know, was he or no.

Winny. Sorrow-a-know, know I; so you'd better not be meddling with Moscow at all, Watty Brannigan. Come from Spain or Portugal, that's asy: and what will you say for yourself now? Have your story pat out of the face, and not bungle it as you did when you *tould*

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the gentleman you'd sarved under Admiral Hood in Gibraltar. Hush, hush, child!

Watty. I grant ye that was a little mistake to a gentleman; but if it had been a lady she would never have noticed: and it was all along of my having been a sailor in the morning, which confused my head with the grog I took. But as to getting a story by heart, to tell out o' the face, I lave that to you, Winny Brannigan; it's what I could never compass, and scorn to do any way, for my *genus* always supplies me with memory enough on the spot.

Winny. Oh! you're a great genus, Watty Brannigan; but they say liars had need of long memories.

Watty. Put on your black bonnet then, will you, Winny, and take your red cloak about you, and be dacent; for now you're to be a poor soldier's wife, you know, you must be dacent. Now mind, and don't call yourself a follower of the camp, as you did at Carrick.

Winny. Oh! never fear: give me the childer on my back.

Watty. Now, Winny Brannigan, I won't stir a step *wid* you, if you have twins: for that cursed wooden child of yours will bring us to the House of Industry yet, if you don't wean yourself from it. Take your one live child in your arms, and a lovely child it is, and be contint.

Winny. Why then it is a lovely child, Watty, true for ye!

Watty. And, Winny, am not I a good soldier now, with my wooden leg, and my cut in my forehead, and my eye that I lost at the trenches at Vimeira.

Winny. Trenches, was there trenches in it?

Watty. There was, I'll take my book-oath.

Winny. Whether or no, let me settle the bandage over your eye.

Watty. And now for a glass to good luck, my dear, and we'll be off.

[*Takes out a bottle of whiskey: Watty and Winny Brannigan drink by turns.*

Watty. But where's Andy the boy; here, Andy, here's liquor that will make a cat speak, and a man dance.

Andy. I'll take none, I thank you, I have an oath again it.

Watty. As you plase; more's the fool you! But what

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shall the boy be to-day (*turning to Winny*), shall he be a ballad-singer or Dumb Andy?

Winny. Try the ballad-singer—sing a bit, Andy, till we see what's in you.

(*Andy sings mournfully.*)

"My father he lived in the bog of Allen,
And he had neither a house nor a place to dwell in.
By the laws, he had neither land nor living,
But what the neighbours chose to give him."

Watty. By the laws! That will never do, that's too dismal a ditty by half, Andy; try the sprig of shillala; man alive, pluck up a spirit.

(*Andy attempts to sing.*)

"Who has e'er had the luck to see Donnybrook fair,
An Irishman all in his glory is there,
With his sprig of shillala, and shamrock so green."

(*His voice fails.*)

Winny. Oh! that will never do, Andy.

Watty. Blood! man, can't you put a little life in it, as I do?

(*Watty Brannigan sings*).

"Och! love is the soul of a nate Irishman,
He loves all that's lovely, he loves all he can;
With his sprig of shillala, and shamrock so green.
His heart is right honest, he's open and sound,
No malice nor envy is there to be found.
He courts, and he marries, he drinks, and he fights,
He loves, och! he loves, for in that he delights;
With his sprig of shillala, and shamrock so green

"Who has e'er had the luck to see Donnybrook fair,
An Irishman all in his glory is there,
With his sprig of shillala, and shamrock so green.
His clothes spick and span new, without e'er a speck,
A nice Barcelona tied round his nate neck.
He goes to a tent, and he spends half a crown,
Comes out, meets his friend, and for love knocks him down,——
With his sprig of shillala, and shamrock so green."

Watty. Try it now, Andy: can't you sing it as I do, in the true spirit?

Andy. No, I can't sing at all at all, since I lost my mother.

Winny. Oh the cratur! we won't ax him to sing.

Watty. No, I'd bawl my lungs out for him sooner my

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self, or be a soldier, or a sailor, or a blind man, or any thing at all.

Winny. And I the same, Andy.

Watty. No, we'll not be so cruel to ax you to sing against the grain, Andy; nor to do any thing at all but what ye like, long as ever we can do for ye, my boy.

Andy. Thanks to yees, then, I'm ready to do any thing at all I can; and if it's pleasing to you, I'd rather work than not.

Watty. Work! Troth we'll not set ye to work any how, that would be too bad. But what will you be *the* day, Andy?

Andy. Oh! what can I be *this* day, but what I am every day, a poor orphan boy.

Watty. Then be Dumb Andy still.

Winny. But why must he be dumb? Sure, if he was to speak for himself, I think he'd touch a heart of stone.

Watty. Ay, but not the heart of the rich, that's harder than the stone—some of them rich, I wouldn't say all. But any way, there are so many orphan-boys about now, the quality's tired of them; and we must always be having something new and out o' the way, to draw the tear from the eye, or the money from the pocket.

Winny. Pocket! sorrow pocket have they now to carry the little charity in that they might have, had they the pocket. They have no pity now; for without the white pocket-handkerchief what would the ladies do with the tears? Oh! it's I that knows every turn of them. But hush, till I hear—what noise is that I hear, Andy?

Andy. 'Tis only the pig grunting, ma'am.

Winny. 'Twas not that I *h'ard*—I'd know a pig when I'd hear him, sure.—It was more like a cock crow.

Watty. Maybe then it was the geese you *h'ard*, if there's geese in it. No, faith, I have it now—it was this white cock crowing. Murder! here's a woman coming up the hill—by the laws! its our old one of the gate—Out of that wid yees!—over the gripe, smart, Winny Brannigan! Come along after, Andy, smart!

[*Exeunt Winny and Watty.*

Andy (*aside, pausing before he goes off*). Oh! if it was pleasing to Heaven! and if it could be without offence to these that has been father and mother to me, when mine was took from me, I'd like better to follow some

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honest *industry*, sooner nor this cheating life of a dumb beggar. But what help! could I turn traitor, or informer, or runaway!—(*pausing*). No, I can be nothing else —I must be Dumb Andy. [*Exit Andy.*

SCENE III.—*A lawn before the steps of a castle. Cæsar, Bess, and Joscelin. Cæsar has a paper kite in his hand—Bess is stretching out the tail of the kite—little Joscelin is looking on, admiring.*

Jos. What a beautiful kite! and what a fine long tail!

Cæsar. Bess, what are you about?

Bess. My dear, I am fastening some bobs to the tail, several are wanting.

Cæsar (*holding the kite up and looking at it*). Well, my dear kite, you certainly are a beauty! My father was very good to give me a breastbone for you, and to help me to make you as he did, with his own hands, and with his own head too; and you know, Bess, he says, and I think it is very true, that *head* is a great deal better than hands: without papa's head, Mr. Kite, you would have been a very different kite from what you are.

Jos. Without papa's *head*—what do you mean, Cæsar?

Cæsar. My dear little boy, I mean the inside of papa's head; but you cannot understand, you are not old enough yet to understand about the insides of heads.

[*Cæsar hums a tune.*

Jos. Stoop down to me, Cæsar, I want to whisper—it is a secret that Bess must not hear—(*whispers*). Does Bess know about the song that you are making?

Bess. I hear you, Jos, take care.

Cæsar (*stopping his mouth*). Can you never hold your tongue, Josceline?

Bess. My dear Cæsar, I knew it long before Josceline told me.

Cæsar. How, pray? Who could tell you?—nobody knew it but myself.

Bess. Well, you told me.

Cæsar. I!

Bess. Yes, you—you were roaring it out last night after you were in bed; I must have been deaf if I had not heard you.

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Cæsar. What! through the wall?

Bess. Through twenty walls I could have heard you.

Cæsar. And how did you like it?

Bess. If you'll sing it again now, I shall be able to judge; but I was too sleepy last night.

Jos. Do sing it, Cæsar: sing it for me.

Cæsar. Well, so I will, while Bess is finishing those bobs for the tail, which will never be finished, I think.

Bess. My dear, they will be finished in five minutes, if you will sing to Josceline, and not stand with your eyes fixed upon me, for *that* makes all the things slip out of my fingers.

Cæsar. Now that is the most ridiculous feeling! *I* never feel that!—When I am doing any thing, I don't care how many people stand with their eyes fixed upon me.

Bess. Very likely, because you are a man; but I am a woman.

Cæsar. And must not a woman be looked at? I'll be bound she'd be soon sorry for that. What do you curl your hair for?

Bess. Sing your noble kite song for Josceline.

Cæsar (*clears his throat*). Now, Bess, do you remember what my father told you about Pindar?

Bess. Yes, yes.

Cæsar. Then please to remember, my kite song is an irregular ode, you comprehend; so, Bess, you are never to mind the length or the shortness of the lines, or the number of the feet; no counting upon your fingers.

Bess. No, no, my fingers are too busy—sing, only sing.

Jos. Pray sing.

(*Cæsar sings*).

My pretty kite fly,
High! high! my kite, high!

Cæsar. Now the measure changes.

Bess. Well, we shall find that out—only sing, don't say.

Transparent gauze paper,
As light as thin vapour,
Speeds your elegant form,
To contend with the storm.
My pretty kite, fly,
High! high! my kite, high!

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Cæsar. These two last lines are the chorus, Joscline

Jos. Chorus! very well—sing on, Cæsar.

Cæsar (*pointing to the kite as he sings*).

Proud arches your outline,
Nice tackle your fine twine;
Full four yards and a nail,
Your magnificent tail;
Oh! my pretty kite fly,
High! high! my kite, high!

Cæsar. Now you are to imagine the kite going up into the air.

Bess. Well, well, we will imagine whatever you please, if you will only go on.

Yes, yes, fancy sees thee,
Hard striving to please me;
Now rising, now falling,
Perplex'd by my bawling;
It flutters, it flickers,
It rallies, it bickers.
Ah! poor thing! see it dies—
No! it mounts to the skies.
My pretty kite, fly,
High! high! my kite, high!

Loose the string,
Give it wing;
Have your will!
Take your fill!
Breast the air!
Have a care!
Clear the trees!
Catch the breeze!
Fly, fly, my kite, fly!
High! high! my kite, high!

Oh! the joy of all hearts,
Look, look, how it darts;
See the tail how it streams—
See the light how it gleams.
Fly, fly, my kite, fly!
High! high! my kite, high!

It holds its course fair—
A white bird in the air:
Mark the bird as it flies!
Now a speck in the skies!
A bright spot in the gleam!
A black mote in the beam!
Fly, fly, my kite, fly!
High! high! my kite, high!

Jos. Oh! Bess, Bess! Cæsar! look, look at these odd people coming—what are they?

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Bess. Beggars, I believe.—A soldier! a poor soldier with a wooden leg.

Cæsar. With a wooden leg!—poor man! let me speak to him.

Enter Watty and Winny Brannigan, and Andy.

Watty (*in the character of a soldier*). Oh! long life to you, pretty masters and miss, and may you never know sorrow as we do.

Bess. Poor man! what sorrow have you known?

Watty. Sure I've six little childer, that has not a bit to ate since yesterday morning, and I, a cripple, that has lost my limb.

Winny. Oh! Miss, if you'd seen my husband that is in the hospital, lying when his leg was cut off.

Jos. Leg cut off!

Watty. Ay, was it, master—(*sighing deeply*)

Jos. Did not it hurt you very much?

Watty. It did master, terribly; but (*turning to Cæsar*) I have the comfort to think I lost it in the service of my country, and I stood my ground in the day of battle.

Cæsar (*aside*). I like him, Bess, he's a brave fellow.

Watty. But now I'm no more good in the army, on account of my wooden leg, and of this my wound in my head. And if it had not been for my good wife here, miss, I should have been lost entirely; for there I was left on the field of battle, under heaps of the bleeding.

Jos. (*shrinking*). The bleeding! Oh!

Watty. The bleeding, and the groaning, and the dying; and myself, I must have died, or been buried alive, but for her, that come to *s'arch* for me, and found me, and saved me.

Bess. Oh! what an excellent woman.

Cæsar. Come with me, brave man, I will show you the way to the servants' hall, and then I will go and ask papa to give you something.

Winny (*to the three children*). Health, wealth, and prosperity to yees.

Watty. The Lord presarve yees! a long life to you, master, and may you live till the world's tired of you; and a happy death to yees.

Jos. What is the matter with this poor boy? he looks very melancholy.

Watty. Because he's a great infliction: he's deaf and dumb from his birth master.

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Cæsar. Deaf and dumb!

[*Andy makes signs that he cannot speak or hear.*

Jos. Cannot he speak! poor! poor! poor boy!—(*Takes him by the hand to lead him*). I will lead you, dumb boy, but you cannot hear me.

Cæsar. And what battles were you in, soldier? I like to hear of battles.

Watty. Then it's I can tell you enough about them, master, and too much. I sarved under the great General Wellington.

Cæsar. Oh! did you? then come to papa, and tell him all about it. Oh! take care! take care, man! you've put your wooden leg through my kite; and the tail, boy, you are all entangled in it. O! my kite! my kite is spoiled!

[*Josceline and Cæsar try to disentangle the man and boy, but they cannot. Andy makes signs of being sorry. Cæsar, after giving one stamp of anger, recollects himself, and says, calmly,*

Cæsar. I won't be angry—I'm sure you did not do it on purpose—(*he cuts the tail of the kite*). There, now, it is all over. Come with me, and I will ask papa to give you something, and I can give the boy a coat of my own, only it will be rather too short, I am afraid; but I can give him a hat, and a pair of shoes for his poor bare feet. [*Exit Cæsar and Bess.*

Andy (*aside*). What a kind-hearted little fellow! now it's a sin to go to impose upon him. [*Exit Andy.*

Watty. It's likely we shall make something of our visit to this castle. It's not in every castle we find the likes of these. [*Exit Watty and Winny.*

SCENE IV.—*A Hall in Bridgeman Castle—a gallery at one end of the hall, and a staircase leading to it.—Mr. and Mrs. Bridgeman and Bess.*

Bess (*out of breath, yet eagerly speaking, looking at her father and mother by turns*). Oh, papa! oh, mamma! she's the most excellent woman—she dragged her husband off the field of battle with her own hands! Papa, she's a most excellent woman; and her nose is very like mamma's, I assure you: and his leg—he has a wooden leg, sir. And do you know, mamma, he can tell

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you all about the Dutchess of Wellington, I am sure, for he is perfectly well acquainted with the Duke of Wellington. Yes, perfectly, ma'am, I assure you; he served under him; he said so; and then another misfortune, they have a dumb boy, papa.

Mrs. B. A dumb boy, have they? I am sure I have not a dumb girl.

[*Mr. Bridgeman, leaning over the rails of the gallery.*

Mr. B. I don't understand one word of your whole story, Bess; you have so mixed a leg and a nose, and the Duke of Wellington and a dumb boy, together. Suppose you were to take breath and time to separate these things.

Enter Cæsar, running, out of breath.

Bess. Oh! here comes Cæsar, sir! and he can tell it you a great deal better than I can.

Cæsar (*holding his sides*). Oh! oh! oh! if I had not run so very fast—

Mr. B. Why all this desperate hurry, good folk? Is your man with a wooden leg running away?

Cæsar (*indignantly*). Running away! He, sir! running away! No, papa, I assure you he is not a man to run away. He is too brave to run away! Oh! Sir, I wish you had but heard all the things he has been telling me about himself and the Duke of Wellington. He has been in I cannot tell you how many battles, and he has a great cut, this long, across his forehead, and he speaks of it just as I would of a cut in my finger; and he lost his right eye in one battle, and his leg was shot off at last. And he says, papa, that he lost all in doing his duty, and therefore he is content; and if he could he would march again to-morrow, and fight in the defence of his king and his country; he must be a brave man, must not he? Oh, papa, do come down stairs and see him. I think such a man as he *is*, does deserve to be rewarded; and I am sure you will give him something, won't you, papa?

Mr. B. Certainly, if he *is* such a man as you have described him to be.

Bess and Cæsar (*clapping their hands*). I thought so! I was sure papa would.

Bess. And, mamma, you will give something to the woman, the excellent wife, won't you, mamma? Do,

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Cæsar, tell her about his wife's dragging him, and saving him from being buried alive. You can tell it so much better than I can.

Enter Jos., running. Mamma, I led the dumb boy all the way myself by the hand carefully.

Mrs. B. Was he blind as well as dumb, my dear?

Jos. No, mamma, but he could not ask the way, so I showed it to him; and, mamma, I met Kitty, and I asked her to be so good as to give him something to eat, and a great deal too, for his poor jaws look very thin, mamma, as thin as this—(*drawing in his cheeks*). But, mamma, Kitty said that she must know first whether you liked it; for she says she cannot give to all the beggars that want, and that you and papa can tell best who wants most. So, mamma, will you come and see this poor, poor thin dumb boy. I am sure you will think he wants, as much as anybody can, something to eat, mamma. Oh! do come mamma.

[*While Josceline has been speaking, Mr. Bridgeman comes down from the gallery, and takes the little boy in his arms, kisses him, and sets him down. Then takes Bess and Cæsar by the hand, and says,*

Mr. B. My dear children, I am glad to see that you are so good-natured, but—

Bess (*interrupting*). Yes, papa, if you had seen how Cæsar bore his kite's being all torn by this soldier's wooden leg, and the tail all entangled by the dumb boy, you would have been pleased with his good-nature indeed.

Mr. B. And I am pleased with yours, my dear little girl. But, as I was saying, or going to say, how can you be sure, my dear children, that all that these beggars have told you is truth.

Bess. Beggars, papa! They are not beggars, I assure you, sir.

Mr. B. I thought you told me that they begged you to give them something to eat, and begged for some money.

Bess. Yes, papa, they did beg to be sure, but they are not common beggars.

Mr. B. How do you know that, Bess?

Cæsar. But, papa, suppose they are common beggars: common beggars can tell the truth; cannot they?

Mr. B. They can; I wish that they always would. But I am sorry to tell you that I have heard many of them tell lies.

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Cæsar and Bess. I am very sorry for that, papa.

Jos. Lies! Oh! Oh!—(*groaning*).

Cæsar. But, papa, you never saw these beggars.

Bess. Beggars! Pray, Cæsar, do not call them beggars: how can you call that woman in that nice black bonnet a beggar?

Cæsar (*impatiently*). Well, I know nothing about her bonnet; the soldier looks much less like a beggar. But I must call them all beggars, to make my father understand. Do let me go on with what I was saying. I had such a good argument! But you put it out of my head with your vile bonnet: women are always thinking of bonnets.

Mrs. B. Cæsar, don't put yourself in a passion, or you will not recollect your good argument.

Cæsar. I do recollect it though. Papa, other beggars having told you lies is no proof that these people do not tell truth.

Mr. B. No *proof*, my dear, *but*—

Bess. Oh, I hate *but*.

Jos. Papa, let me speak now. Papa, the dumb boy cannot tell lies; because he cannot speak.

Cæsar. Yes, he can speak on his fingers, he said *hungry!* I saw him: I can speak on my fingers, and I can ask him any questions you please.

Mrs. B. to Mr. B. My dear, as Cæsar says, it is not just to take it for granted that these people do not speak truth, merely because other beggars have told us lies. I wish you would see and hear them.

Mr. B. I will do any thing you ask me to do, my dear.

Children (*all together*). Thank you, thank you, papa: thank you, mamma.

Mr. B. (*drawing Mrs. B.'s arm within his, and moving towards the door*). But, pray, how did these people get into the lawn. We ordered that no beggars should be allowed to come this way to the house.

Bess. I suppose Robin or Margery let them in, because they did not look like common beggars.

Enter George the Footman.

Cæsar. Oh! now there is some horrible person, come to stop papa, I know. [*A groan from the children.*

George. Sir, it's only Robin and Margery, that wants to speak a word to you, if you please.

Mr. B. Let them come in.

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Enter Robin and Margery: Margery has a doll in her arms dressed like an infant.

Bess. A little child! The poor, nice woman's child, mamma, I do believe. Good Margery has brought it. Is it not the soldier's wife's child, Margery?

Margery. Why, miss, it is, and it is not.

[*The children gather round her.*

Jos. (*struggling to kiss the doll, then starting back*). Oh! my dear, it has wooden lips—it is not a child—it is a doll—a wooden doll!

Margery. Troth it is, as my poor head knows well enough, for it gave me one good thump when it was on its mother's back, and she turning quick round.

Mr. B. (*putting his finger on his lips and looking at Mrs. B., aside*). We will not say a word; let us hear what the children will say.

Bess. Its mother! what mother?

Margery. The beggar-woman, miss, that owned it, and that had it on her back.

Bess. Oh! thank goodness, that cannot be our woman, for her child was not upon her back, it was in her arms; and besides, her child is a real live child, I had it in my arms and kissed it.

Jos. And so did I; and its lips were warm, and its eyes moved.

Bess. So our nice woman is clear—I am so glad of that.

Robin. Lord love her, how kind-hearted and *asy* o' belief she is; and what a sin to go to cheat the like of these.

Bess. Cheat! why, Robin, who cheats us?

Margery. Ah! miss, I am afraid your nice woman, as you call her, is no better than a cheat! for I looked at her below, as I come in, and though she has new dressed her, to my opinion she is one and the same woman that come to the gate, wanting to come in, this day, as we were sitting, Robin and I, after dinner, just as might be—

Cæsar. Oh, never mind how you were sitting—go on and tell us about the woman.

Bess. And the doll.

Margery. The doll! the woman! where was I? Oh! why, then, I would not let her through the gate, because my master ordered no beggars to be let up,

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Cæsar. Yes, we know that, we know all that.

Mrs. B. Gently, gently, Cæsar, if you are so impatient you will not hear the story one bit the faster, you will put poor Margery quite out.

Cæsar. I beg your pardon, Margery, will you sit down?

Margery. Oh, thank you kindly—no, master, it's not for me to be sitting; so I was keeping the gate, as it might be this ways, and she turns smart, and her child's head hit me a thump like a post, and my mind misgive me, as I told Robin, it was not flesh and blood even.

Bess. Yes; but this was not that child that I kissed.

Margery. No, miss, true; but see, she had two childer on her back at that time.

Bess. Oh, it cannot be the same woman.

Cæsar. How do you know it was the same woman, Margery? and how do you know this is the same child, or doll-child, that she had on her back?

[*Margery looks at Robin.*

Robin. Why, master, Margery won't say she is sure, quite sure, to swear to its being the same child, becase she is very careful not to wrong any one, beggar or other; but, in my opinion, she has good *rason* to think it.—Now, tell on Margery, and don't be afear'd; you know you don't mean to wrong no one, but only to hinder the master and mistress, and all these young ones, that is so good, from being cheated out of their charity, that should be kept for them that *desarves* it.

Margery. That's true, so I'll tell all: I went up to the ould barn, at Killogenesawce, thinking to find my white cock that strayed, and thinking of nothing else in the wide world, when, what should I find but this doll in the corner, and ever so many scraps of rags about, and this beard of an old man, that I minded was the beard of the old blind beggar-man, that was with the woman at the gate.

Bess. Then that cannot be our man, because he is not blind, or old, nor has he a beard.

Margery. He took off the beard, maybe, miss, for here it is in my hand.

Cæsar. But our man has a wooden leg, Margery.

Margery. Maybe he put on the leg, sir.

Cæsar. How could he put on the leg, Margery?

Robin. Oh! they have, some of them beggars, wicked ways and means of taking off beards and putting on

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legs, I'm *toodl*, in great towns; but I did not think, till now, so much wickedness could get to the country.

Cæsar. Wickedness! but it's impossible!—what did he do with his real leg? you don't think he would cut it off?

Robin. No, master, but I think he might double it up, as they say them rogues have a knack of doing. Margery, show master, dear.

Margery (*tries to bend back Robin's leg*). Oh! it's too stiff, my poor Robin, and your legs are too honest legs for it.

Cæsar (*tries*). And mine too—and my soldier's too, I hope.

Margery. Well, I hope so; I hope it will turn out so; good to hope the best. But I found a shoe too, and a bit of a stocking pulled off: and I looked out and I saw the three beggars making away, and I watched till I seen them get over the ditch and the wall at the end of the lawn, and so up to where you was all playing before the door.

[*The children look at one another, and are quite silent for a minute, and each sighs.*

But there's one thing in justice I ought to say, Robin; the boy, that's with them, we have nothing against him, sir; he seems a poor innocent *cratur*, and he has an honest look, and maybe it's his misfortune, not his choice, to be with the likes of them. And they say he's an orphan boy, and God forbid I should wrong the orphan, and the deaf and dumb orphan, that can't hear what's brought again' him, nor plead for himself.

Bess, Cæsar, and Jos. (*exclaim*) Good Margery!

Mr. B. You say he is a dumb boy.

Margery. I think so, sir: to the best of my opinion, they call him Dumby.

Children. Oh! yes, he is dumb, papa; we all told you so, you know.

Mr. B. True, my dear, but I am not certain of it, nevertheless; the boy may pretend to be deaf and dumb as easily as the man pretended to be blind and lame.

Bess. Oh, father! do you think that this boy could possibly be so deceitful? and—

Jos. Oh, no! he looks good.

Mr. B. I wish I could be sure that he is good; I should then be as ready to do something for the boy, as

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you, any of you, could wish; but first I must make myself sure of the truth. Cæsar, Bess, and you, my little Joscelin, think, if you can, of some way of finding out whether this boy is really deaf and dumb, or whether he is only pretending to be so. Your mother and I are going to walk; we shall return in half an hour; and if you think of any good way of determining this, you shall try it, or I will have it tried for you.

Cæsar. I'll go by myself to think. [*Exit Cæsar.*

Bess. So will I. [*Exit Bess.*

Jos. And so must I. [*Exit Joscelin.*

Robin. God bless them, good childer! they are, sure enough.

Mr. B. Margery, have you said any thing to the woman about the doll?

Margery. Not a word, not a word.

Mr. B. Do not say any thing of it to anybody, and leave the doll and the beard here with me.

Mrs. B. Go into the housekeeper's room, Robin and Margery, she is at tea, and will be glad to see you.

Mr. B. And wait there till we come back, if you please.

[*Exeunt Mr. and Mrs. Bridgeman.*

Margery (*to Robin*). Then I *hope* he is deaf and dumb, Robin. [*Exeunt.*

ACT II.

SCENE I.—*The Hall in Bridgeman Castle—Mrs. Bridgeman—Cæsar—Bess—and Joscelin.*

Bess. Mamma, did papa tell you?

Mrs. B. Tell me what, my dear?

Cæsar. Then he has not told her. Now, Bess, let me tell the three ways that we have invented for trying whether deaf and dumb Andy is really deaf and dumb or not.

Jos. Mamma, I have invented a way.

Mrs. B. You! you little creature! you talk of inventing!

Cæsar. Well, mamma, and it is a very good invention for him. Mamma, he is to go very softly behind him.

Mrs. B. Who is to go behind who?

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Cæsar. Oh ma'am! Joscelin is to go very softly behind the deaf and dumb boy, and to tickle him.

Jos. And you'll see how softly and well I'll do it; and if he is not really dumb, I am sure he'll cry *pray don't.*

Cæsar. Mamma, now listen to my way: I have thought of a very easy, common way, by which I can make a charming horrible noise.

Mrs. B. That I do not in the least doubt, my dear.

Cæsar. A noise, mamma, that would startle any stranger who did not know what it is, and might make him think that the whole house was coming down, or somebody tumbling from the top to the bottom of the stairs. (*Cæsar runs up the staircase and calls*) George! George! come out and bring the basketful of turf from papa's bedchamber.

[*George appears in the gallery carrying a large basketful of turf.*

Cæsar. Now, mamma, look how I balance it here, so that the least touch will empty it; and then the turf will make such a tremendous noise, thundering down into that empty wooden sarcoph—, or whatever you call it, which is just underneath. Shall I let it fall for you, mamma?

Mrs. B. No, thank you, my dear; the hearing it once will be quite sufficient for me.

Cæsar. Oh! then you intend to be present at our trials as well as papa—I'm glad of it. But I am not quite sure whether the overturning of this turf, or sounding the buglehorn in his ear, will be the best.

Mrs. B. Worst, you mean. How this poor Andy is to be tormented.

Bess. Now, mamma, for my trial. You know pretty poll, Kitty's green parrot—well, she will lend it to me, it is used to me, and I can do what I please with it; so I shall bring it in, without the boy's seeing what I'm about, and when it is close to him, I will stroke his head —pretty poll's head, I mean; and that instant it will scream out, for I've taught it long ago, "*Ah! you rogue!*" and if Andy is a rogue he will start, or—

Cæsar. There, now, you've said enough, Bess, let mamma listen to me. Mamma, do you know my father says, if he is convinced that the boy is not a—what was it, Bess, that means a cheat?

Bess. An impostor.

Cæsar. Impostor—if papa is convinced Andy is not an impostor, he will do something good for him—he did

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not tell us what, mamma; and now we are all ready, and I will run and call papa. [*Exit Cæsar.*

Bess. I will run down to Kitty for pretty poll.

Mrs. B. Take care pretty poll does not bite you.

Bess. It will not bite me, mamma; but perhaps it will bite Andy. [*Exeunt.*

SCENE II.—*A Servants' Hall—Watty Brannigan, Winny, and Andy.*

Winny. Watty, Andy, put your heads close to me, till I tell you what I overheard when I was pretending to be asleep and snoring.

Watty. What is it?

Winny. Take care there wouldn't be any one overhearing me there in the kitchen.

Watty. Never fear, they're all of 'em too busy, about the Lord knows what, that they always have to do in these big houses—what did you hear?

Winny. I heard one of them little childer, that is 'euter than we thought 'em, telling the housekeeper that the father suspects us all to be vagabonds and impostures.

Watty. That is very ungenerous of the gentleman, then.

Winny. True for ye; but it's you, Andy, they suspect of not being dumb, and they are to make a trial of ye, mind, someway, with a parrot, and a turf-stack, and tickling, and I don't know what; but whatsomdever it bees, Andy, stand to it, and don't be betraying yourself nor us.

Watty. Oh! I hope you wouldn't, Andy.

Andy. No! not betray you, never, when you've been so good to me; rather be flogg'd I would. But I wish I might confess the truth about myself—might I!

Watty. Oh! murder! the truth! never!

Winny. Why, then, he might say it was all a mistake about his being dumb, and that it was only a toothache he took hindered him to spake—couldn't he tell the truth about the rest?

Andy. Ay, let me tell of how good you was to me when my mother died of the *faver*, and you took me an orphant and kep' me from starving—Oh! let me tell the truth about that.

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Winny. Ay, sure, the truth would do no harm there.

Watty. Oh! I'll not have it—I'll have nothing to do with the truth—for that won't hang together with the rest of the story, that we have not a bit to put into our own mouths; then how could we help him, the quality would ax. Oh! it's what it must be, all truth or none. The truth will only do for them that sticks to it close, and from the first. It's too late in life now, Winny Brannigan, for you and me to be taking to it.

Andy. But not for me—it's early with me—I wish I'd stuck to the truth then from the first—Oh! let me tell the truth now!

Watty. Will you betray *us* then?

Andy. Never—Oh! I don't know what I'll do.

Winny. Be *Dumb Andy*, that's all you can be.

Andy. I'll die before I'll betray yees, but I'm sorry—

Watty. Hush—here's one coming—be dumb.

Enter George.

George. Whichsomever of you three be deaf and dumb, be pleased to follow me.

Watty. That's he, poor dumby—Dumb Andy, sir; and he's deaf too, from the hour he was born.

Winny. I'll spake to him on my fingers, such as they are, and make him sinsible he's to go up and in wid you, sir.

[*Winny speaks on her fingers, Andy nods and goes with the footman. Exeunt George and Andy.*

Watty. Oh! do you think Andy will be true to us?

Winny. He will, I'll engage.

Watty. Come to the fut of the stairs, where we might hear a bit how he stands the trial—come off, for this bees no convanient place for listening.

SCENE III.—*Hall—Mr. and Mrs. Bridgeman in the gallery—Cæsar, Bess, and Joscelin.*

Cæsar. Papa, I hope you are near enough to the turf-basket to make it empty itself the very minute I put on my hat? and not till then, remember, papa, if you please.

Bess. And, mamma, were you so very good as to desire to have the supper ready for the poor boy, if we find that he really is not a cheat?

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Mrs. B. Yes; whenever I ring the bell supper will come, if—

Bess. Oh! mamma, don't say *if*—I think—I hope—

Cæsar. So do I hope—

Jos. So do I, with all my heart; and hope he may have some supper too.

Cæsar. Hush, Joscelin, here he is.

Enter George and Andy.

George. The deaf and dumb boy, sir, as you desired.

Cæsar (*speaking very loud*). Come this way, if you please, my good boy—come to this side of the room.

[*Andy stands perfectly still.*

Bess (*repeats louder still*). My brother begs you will go to that side of the room where he is standing. Oh! my dear, he is perfectly deaf, you see.

Cæsar (*aside*). Hush, my dear, you know if he is *pretending*, he hears every word you say as well as I do.

Bess. Now, Cæsar, can you imagine that he hears you, only look in his face; does he look as if he heard?

Cæsar. Indeed, I do not think it possible he could look so innocent and honest if he was cheating.

Bess (*low*). My dear Cæsar, did you see how he blushed as red as scarlet when you said honest?

Cæsar (*aside to Bess*). Now I'll speak to him on my fingers, and ask him if he was born dumb.

[*Cæsar speaks on his fingers, Andy attempts to answer, Bess and Cæsar repeat the letters as he makes the signs.*

I—c—a—n—t.—Can't tell.

Cæsar. Can't tell!

Bess. No; how could he, when he was an infant, how could he know? Did you see how his fingers trembled?

Jos. Hush! hush! now for my trial.

[*Joscelin creeps behind him and tickles him—Andy writhes to this side and to that, but makes no exclamation.*

Jos. Oh! he is certainly dumb, for anybody who was not dumb would have called out, "*Oh, pray! pray don't tickle me!*" long before this time.

Cæsar (*aside to Bess*). Now if he stands *my* trial—

[*Cæsar puts on his hat, and instantly his father empties the turf-basket from the gallery—the turf falls into a turf-box below with a thundering noise—Andy stands with his back to the gallery, and appears not to hear.*

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Bess. Now for my trial; and if he stands that!—now for it!—Poll, Poll, not a word till I bid you—(*Bess takes the parrot out of the cage, and strokes his head—the parrot screams loudly*)

Oh! you rogue! oh! you rogue!

[*Andy stands as still as before, and shows no sign of hearing.*

Bess (*joyfully*). Oh! he's deaf, he's deaf indeed. Nobody can doubt it now.

Cæsar (*takes down from the wall a speaking-trumpet, and roars through it*). He is honest! he is honest! hear ye all men, and all women! Are you convinced now?

Jos. Mamma, mamma, ring the bell for supper.—(*Mrs. Bridgeman rings the bell, and Mr. and Mrs. Bridgeman come down from the gallery; the children all run to them, saying*)

I hope you are convinced now, papa! I hope you are convinced now, mamma!

Mrs. B. I am convinced that he is quite deaf, for he was tried when he was entirely off his guard.

Mr. B. I believe you are right, my dear children, and I am heartily glad of it; I should be sorry to make you, who are young, suspicious. I hope that, though I am old, I am not very suspicious myself.

Cæsar. No, indeed; papa is never suspicious. Now I will go and get the hat and the trousers that you said I might give him, papa. [*Exit Cæsar, running.*

Jos. Oh! take me with you, Cæsar. [*Exit Joscelin.*

Enter George with supper—Bess sets a little table and a chair, and makes signs to the dumb boy to eat—he obeys the signs which Mrs. Bridgeman makes—Mr. Bridgeman, all the time, watches him attentively.

Bess. He does not eat as eagerly as I expected he would, mamma.

Re-enter Cæsar and Joscelin, loaded with clothes of different sorts.

Cæsar. Mamma, may I give him this old, very old great-coat of mine, to keep him warm in the winter?

Mrs. L. Yes, my dear; but I am afraid it will hardly keep him warm.

Cæsar. Will this flannel waistcoat do, ma'am? and these trousers, papa?

Mr. B. He will never get them on, my dear.

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Cæsar. Oh yes, papa, you will see they will go on very easily. And this shirt, mamma, Kitty said I might bring to ask you—and these shoes she gives him herself—and this hat of mine, mamma, if you please. Here, poor deaf and dumb boy—here, they are all for you.

[*Makes signs to Andy that they are all for him—Joscelin jumps upon the chair behind him, and puts the hat on Andy's head—Cæsar holds the great-coat for him to put on.*

Bess. Mamma, do you see the tears in his eyes? how grateful he looks.

[*Andy suddenly pushes the coat from him, throws the hat from his head, falls down on his knees, bursts into tears, and exclaims,*

Andy. I do not deserve it! I am not deaf! I am not dumb! I am a cheat!—But oh! I don't know whether I am doing wrong or right now, this minute—(*looking up to heaven*). Oh! if I knew what was right to do!—But I have no mother, no father—*none* to teach me. Oh! if I'm wrong now, I can't help it—I could not stand your goodness and your pity of me—(*sobbing*). I could not!—I could not!—that's the trial I could not stand—any thing but that! and I would never have spoken. They might have flogged me as long as they could stand over me—(*starting up, and changing his look and tone*). Oh! I promised I would not tell!—I promised!—and I've broke my word—and this is worse—Oh! worse than all I have done!

Bess. What does he mean by that, mamma?

Cæsar. I do believe, papa, that he was forced to pretend to be dumb, and forced to be a cheat, by that vile man and woman.

Mr. B. (*in a loud voice*). Ring the bell—send that man and woman up here.

Andy (*throws himself on his knees before Mr. Bridgeman*). Send me to jail, sir; do what you will with me; I *desarve* it all; and am here, ready to submit to all. But oh! spare them, sir; them that was good to me, an orphan boy, when I'd none other to help me.—Oh! hear me, sir; they took me, and nursed me, and reared me, from that day my mother died of the fever. Oh! whatever else they done bad, they were good and tender to me; and now I am a traitor to them, and an informer! Then (*calmly, and in a tone of despair*) better for me I was dead, or had never been born; for I don't know, if

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I was to be killed this minute, what's right and what's wrong, no more nor—

Bess (*puts her arm within her mother's*). Poor orphan!

Jos. Poor boy; I think he wishes to be good.

Cæsar. Oh, if he had had a father and mother as I have. My dear father, speak to him—Oh! tell him he is right *now.*

[*Mr. Bridgeman, while his children speak, appears agitated.*

Bess. Oh! if he had had such a father and mother as good Robin Woods and Margery!

Mr. B. Send in Robin Woods and his wife, with that man and woman.

[*Andy clasps his hands in a supplicating attitude.*

Mr. B. Fear nothing; be assured, poor boy, that I will not make you repent of having told the truth.

Andy (*aside*). Oh! if anybody, if any human creature had ever *once* only spoke to me so before in my whole life! [*He sobs and hides his face.*

Mr. B. (*aside to Mrs. B.*). Poor, ill-taught, unfortunate creature! he has quite touched me. But compassion should be of some use. We must have him better taught; we must take him out of the hands of these people.

Enter Robin and Margery.

Robin. O sir! the birds are flown far away by this time!

Margery. Yes, ma'am, they left the servants' hall and kept in the passage a while; and my mind misgives me that they were near the door here, and heard something that made them take themselves off in a hurry; and there I see them running across the field; the man has got both his legs, sure enough: but myself is glad they are gone.

Children. So are we all.

Mr. B. On account of their humanity to this poor boy, I will let them off, otherwise I would have had them pursued and punished. Now we can do something for him: if, as I believe, he really wishes to be good, he shall have an opportunity of being so. I now put him under the care of the most perfectly honest people I know—(*turning to Robin Woods and Margery*). This excellent couple, whom I have now known these thirty years, and who, in all that time, never told me a lie

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never said or did any thing that could injure man, woman, or child; and who have made themselves respected and loved by all who know them.

Robin and Margery courtesy and bow, and say, "Thanks to your honour."

Mr. B. Will you then, my good Robin, and you, my good Margery, try, for one month, whether this boy can be made good for something!

Robin. Troth we will, with all our hearts; and we will never be remembering or throwing the past up again' him—so it's what he may do well and be happy yet, if he will.

Andy. Oh! blessings on yees! will I.

Cæsar (*to Andy*). So, Andy, you find it was best for you to tell the truth.

Andy. Troth it was; no harm, but great good, come by telling the truth: Oh! then, if ever I'm in a condition, I'll show my gratitude, so I will, to them that buried my mother—I'd be bad, indeed, if I was not good to them that was good to me, wouldn't I! *Manetime,* I'm thankful I'm not forced to play the rogue any longer. I'm no more Dumb Andy. [*Exeunt.*

END OF DUMB ANDY.

Written in 1814.

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THE DAME SCHOOL HOLYDAY.

IN THREE ACTS.

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DRAMATIS PERSONÆ.

DAME, an old village schoolmistress.
MISS BABBERLY.
JENNY PARROT, her maid.
ROSE,
MARY,
HANNAH,
NANCY,
WILLY,
} Children at the Dame's School.

CHERRY,
EDWIN,
PHILIP,
} Children of the village clergyman.

FELIX, brother of Miss Babberly.
A PEDLER.

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THE

DAME SCHOOL HOLYDAY.

ACT I.

SCENE I.—*A new-mown field—Enter Cherry and Philip, carrying a large basket of green boughs and flowers.*

Cherry. Here, Philip, let us set it down here, for I am quite tired.

Philip. Tired! But you must not be tired, Cherry; consider that this is my father's birthday, and we have a great, great deal to do! to make his room into a bower with these green branches and honeysuckles. Oh, it will be beautiful, with roses here and there, in garlands; and then we must make nosegays for papa and mamma, and aunts, and have a green bough for every house in the village. Oh! Cherry, indeed you must not say you are tired.

Cherry. Well, I will not: but I may say I am hot, may I not?

Philip. Hot, are you? well, so am I, I must confess, hot enough, if that's all: but push your hat back, as I do—off with this frillikin ruff that you have about your neck. There now, sit down comfortably, and I will fan you with this great fan—(*fans her with a green bough*). Is not that pleasant, Cherry?

Cherry. Very pleasant, only I think it makes me hotter afterward; besides, it must make you all the time so very hot doing it. Now, Philip, let us make our nosegays: that will cool us best. Here, this moss-rose bud, I'll have for mamma.

Philip. But it is not her birthday.

Cherry. But she may have a rose for all that, may not she? Here, Philip, is a beautiful blush-rose for papa.

Philip. Mamma should have the blush-rose, because she is a woman, and blushes. But I will tell you what,

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Cherry, it will not be right to give papa a red, and mamma a white rose.

Cherry. Why?

Philip. Because it would seem as if they had quarrelled.

Cherry (*laughing*). Quarrelled!

Philip (*gravely*). I assure you it is no laughing matter, as you would know if you had read the history of England, as I have. A great while ago, in the dark ages, the houses of York and Lancaster—but you are not old enough to understand me.

Cherry. But I know *what* I am old enough to understand, and something that you don't know, Philip.

Philip. What?

Cherry. Oh! that is a secret.

Philip. A secret! and you will not tell it to Philip!

Cherry. No, not to Philip, or anybody: for I was desired not.

Philip. By whom?

Cherry. Oh! by somebody: but that's a secret too, and I have promised not to tell till the time comes, and the time will come this evening, this very evening—after dinner—after tea, you will see!—you will be very much surprised; and you will be very happy, and you will then know all.

Philip. I know all now, Cherry.

Cherry. Oh! no, indeed, Philip, you do not know about Edwin.

Philip. Yes, but I do.

Cherry. And about the play?

Philip. Oh! hush! take care—you promised not to tell.

Cherry. But since you know it—

Philip. But how do you know that I know it?

Cherry. My dear! did not you say so?

Philip. But you might tell me by accident more than I know; and I should be very sorry for that, because it would not be right.

Cherry. Then the best way is for you to tell me, Philip, all that you know.

Philip. All that I know is, that my brother Edwin has written a little play for my father's birthday.

Cherry. Ah! but I know the name.

Philip. So do I.

Cherry. What is it?

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Enter Felix.

Philip. Oh! here's Felix come home at last—how do you do, Felix?

Cherry. How do you do, Felix?

Felix. Felix! Mr. Felix, I think you might say, children.

Cherry. You have grown very tall, indeed, since you have been in London; you are quite a grown-up person now, I think.

Felix. A grown-up person! yes, to be sure I am, Little-one.

Philip. But he is not as tall as our brother Edwin though—are you, Felix?

Felix. How can I tell, I have not measured myself since I came from Lon'on.

Philip. Come, come then, and see Edwin directly, he will be so glad to see you!

Cherry. And then you can measure yourself with him too.

Felix. I have no desire to measure myself with him, I can assure you. To be in such a hurry to measure one's self is so childish.

Philip. Well, but it is not childish to be in a hurry to see one's friends, is it?

Felix. That depends upon what sort of friends they are.

Philip. Sort of friends! what do you mean? I know of but one sort of friends—good friends.

Felix. But I know several sorts of friends; and so will you when you have been in Lon'on. For instance, there are town friends and country friends.

Cherry. And country mice and city mice. Do you remember that fable, Felix?

Felix. Not I; I have so many other things in my head now, I have no room for fables, I promise you.

Philip. Cherry, let us go on with our business.

Felix. And what is your mighty business, pray? what's all this trumpery?

Cherry. Trumpery!—Oh! Felix, don't kick my nosegays, they are for my father and mother, and this is my father's birthday.

Felix. What is your father's birthday to me?

Cherry. Nothing, perhaps: but do, pray then, if you *ple-e-se*, stand a little farther off.

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Felix. I won't stir.

Philip (*pushing*). You shall though!—for you have no right to trample on my sister's nosegays.

Felix. Don't push me, or I'll make you repent.

Philip. You cannot make me repent it, for I know it is right to defend my sister when she is trampled upon; and if you had been in London a hundred times, and a hundred million of times, you could not make me believe it to be wrong; and if you beat me to a jelly, you could never make me repent of it.

Cherry (*putting herself between them*). Oh! don't quarrel, don't fight. Felix, here's a rose for you. Philip, he did not mean to do me any harm, I'm sure. Come, we had better go home and dress up my father's room —come, *dear* Philip, help to carry this great basket, you see I cannot carry it by myself, and we shall be late, indeed we shall.

Philip. Well, I'll go with *you*, Cherry; but mind, I don't run, at least I don't run away from you, Mr. Felix; you may come after me and beat me, if you like it—and if you can. [*Exeunt Cherry and Philip.*

Felix. Can! you pigmy, you are beneath my notice. What a little savage it is! I expected to be treated with rather more respect at my return to the country; but these children have no manners—how should they, indeed! And they don't know the difference between one person and another—they did not even take notice of my new coat.

Enter Edwin.

Edwin. Fe—(*aside*) no, it cannot be Felix. I beg your pardon, sir, but I took you for a friend of mine.

Felix. Very likely, sir.

Edwin. It is Felix! I cannot be mistaken in his voice.

Felix. Really—that's odd.

Edwin. Come, come, Felix, shake hands, and don't play the fool; I am sure you must know me.

Felix. Cannot you imagine it possible to forget you?

Edwin. Not possible *for a friend*—what! forget your old playfellow, Edwin—oh, you are only joking; you want to see how I shall take it.

Felix. You don't *take* me, I find—did you never hear of *cutting* a man—of *dropping a fellow*—of *shirking a bore?*

Edwin. Shirking a bore!

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Felix. You don't seem to see what I would be at: in plain English, you do not understand me.

Edwin. No, indeed, I do not; but shake hands, at any rate.

Felix. Don't shake my arm off, like a country clown —look, this is the way to shake hands genteelly—"I am very glad to see you, Mr. Edwin Spencer—*d'y'do, d'y'do?*—hope I have the pleasure to see you in good health? and all your house, I hope, 'scaped the influenza? Do me the honour to remember my compliments to them: and do me the favour to tell me where you are, that I may leave my card the first opportunity."—Then bow or nod your head so, and pass on directly—that's *the thing.*

Edwin. You are not serious? This is just like characters I have read of in plays. Well, I must *pass on*, as you call it, now, for I really am in a great hurry.

Felix. In a hurry in the country—what *can* you have to do?

Edwin. That's a secret.

Felix. A secret worth knowing, hey? but you don't understand me. "*Secrets worth knowing*" is the title of a play I saw when I was in Lon'on.

Edwin. Would you like to see a play to-night? No—you would rather, I dare say, stay at home with your own father and mother, now you are just come back to them.

Felix. As to that, I don't care; but what sort of a play, I wonder, can you possibly get up in this place; and what sort of a theatre can you have—where on earth do you act?

Edwin. At the bowling-green. You must not expect fine things; but, as it is summer time, the audience can all sit out of doors; and we have carried the benches from the school-house—dear good Dame Deborah lent them to us; and she has worked so hard to make our dresses for us! and Mr. Hampden has lent us, not only the bowling-green, but the two summer-houses, and the alcove: that alcove makes the prettiest theatre!

Felix. The prettiest theatre! it is a sign you have never seen a real theatre. Oh! if you had seen a real theatre, as I have!

Edwin. I am glad I have not, because I should then, perhaps, be discontented with ours; and now we all like it very much: and I do so hope my father will be pleas-

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ed! Which way are you going now? If you pass by the school-house, do peep in, and you'll see them rehearsing "*The Sailor's Return*," that is the name of our little play. Willy Grant, whom you may remember, is to act the sailor, and he has a good notion of it, and he teaches the rest: come, do come! won't you? [*Exeunt.*

SCENE II.—*A dame school—Dame Deborah in an arm-chair, knitting—Children standing on each side of her, some with papers, as if getting by heart, some looking over the shoulders of their companions.*

Willy. Look, dear dame, how well your Johnny's trousers fit me! and see my sailor's jacket! now, don't I look like a sailor, just come home from sea? and hear how well I can whistle—(*whistles the tune of "'Twas in the good ship Rover"*). That was not quite the tune; if you would but sing it once for me, good Dame Deborah.

Dame. Ah! my dear boy, my singing days are over.

Willy. Oh! no, no, that they are not; and I hope they never will be, while I am alive.

Dame. How the youngster talks!—(*stroking his head*). I shall be laid in my grave long and long before you're a man.

Willy (*stopping her mouth*). Don't talk of that, or you'll stop my whistling—(*trying again to whistle*). I can't do it now.

Dame. Well, I must sing for you, I see.

Dame Deborah sings in a tremulous voice.

"'Twas in the good ship Rover,
I sailed the world around;
And for three years and over,
I ne'er touch'd British ground.
At length in England landed,
I left the roaring main;
Found all relations stranded,
And put to sea again."

Dame. I forget the next verses, till we come to

"My precious limb was lopped off."

Rose (*interrupting*). Oh! that about your precious limb, Willy, must be left out; for your leg must not be lopped off, because you are to dance a hornpipe.

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Willy. That's true; and I'll dance it this minute, that I may be quite perfect. [*He dances a hornpipe.*

Dame. Very well!—very well done, my Willy! but you should have a little stick under your arm—that was the fashion, at least in my days.

Willy. I have one here, and I'll peel it quite white in a minute. [*Sits down to peel the stick.*

Rose. Dame, I have my part quite perfect now—don't you think so?

Dame. As to that, you will do well enough; only, my Rosy, take care not to speak so fast—and make your voice shake a little.

Nancy. Mine is a very, *very* long part, and I have a very, *very* short memory; dear dame, will you prompt me exceedingly loud—as loud as this—(*bawling*).

Dame. The company, love, would hear that. Do not be frightened, and I dare say your memory will serve you very well.

Nancy. But how can I help being frightened before so many people? Now I am not the least bit afraid when I am saying any thing to you, dame.

Mary. No, to be sure; who could be afraid of our dame—except naughty children. Dame Deborah, will you lend me one of your nice plaited caps for this evening?

Nancy. And your black mittens and best shoes to me?

Rose. And your nice silk handkerchief to me?

Nancy. And a white apron for me?

Dame. Ay, ay, dears—only patience—till I can find my keys.

Nancy. But, Dame Deborah, I have a great favour to ask—I am almost afraid.

Dame. Out with it!—you know none are afraid of me but naughty children.

Nancy. Will you be so *very* good as to lend me your velvet hood? because I am to be a very old woman.

Rose. Not at all, you are only to be a middle-aged sort of woman. Dame Deborah's black bonnet would just do for you, and the velvet hood for me, because I am to be a *really* old woman; a grandmother with a stick—this way.

Nancy. Very true; but Dame Deborah's Sunday bonnet! her best black bonnet! oh! I could not think of that, it's a great deal too good for me.

Omnes. Oh, yes, it is a great deal too good for us to meddle with.

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Dame. My dear children, I do not think any thing I have in this world is too good for you. To be sure, that's little enough; but, such as it is, you are heartily welcome, for you are good children, and I love you one and all. It is the greatest pleasure I have on earth to see you happy, dears, and in your own innocent plays to help you all I can. Here, Rose, love, take this key, for you understand a lock, and unlock yonder press, and there you may suit yourselves to your fancies; only don't lose my black silk mittens; and leave me one clean cap for this evening, dears—(*the children go to rummage—Dame Deborah aside*). They are as good children, I will say *that* for them, though I should not praise 'em, being all, I may say, my own, as much as if they were all born my own; they are as good children as any on the face of this earth—always speaking the truth; and honest, so that I could trust them anywhere, and with any thing, or anybody;—then so dutiful, so willing and obedient, so sweet-tempered, and so grateful for the little one does for them! Expert enough at their needles too, and for their ages no ways backward at their books! —but these are not the first things with me. Their duty to their God and their neighbour, first and foremost, I have taught them, to the best of my ability; and if I die to-morrow, I shall die with a clear conscience on that score. But this is no time to talk of dying.—Well, dears, have you found all you want?

Rose. Oh yes, yes; thank you, thank you, dame. Look how well the velvet hood suits me; and though your shoes have high heels, and are rather too large, dame, see, I can walk in them exceedingly well.

Willy. Girls, never mind your heels, and hoods, and caps, and bonnets, but let us try and do better that part of my coming home. Here, Rose, you are to be my grandmother—here's your stick, and here's your spectacles; sit you down in the great chair, reading of your book. Now, grandmother, remember you must not know me too soon, or you spoil all. I seem, you know, only a strange gentleman as it were; and what's that to you? So you keep on minding your book, you know, natural like; and you must not stare at the passenger; and do remember that you are very, *very* old.

Rose. Ay, sure; have not I a velvet hood, see, tied under my chin?

Willy. But that won't do quite of itself. It won't do,

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if you jump about so nimbly, and turn your head so quick and smart. You must keep in mind that your eyes be dim, and that you can't see without your spectacles; and you must stick 'em on your nose without laughing —this way—natural-like; and take 'em off, and wipe 'em slow, with your apron, as our dame does; and then put your finger in your book, to keep your place; and hold the spectacles, so—do try to look like a real old woman.

Rose (*she sits in the attitude of an old woman*). Is that it? I hope I am old enough now to please you, and slow enough too: I cannot, for the life of me, be slower than this; and Master Edwin himself said I was slow enough last time; but you are more particular, by a great deal, than he; howsomever, I will not be cross. Am I cross, Dame Deborah?

Dame. Not more than an old woman may be—an old woman may be cross sometimes.

Rose. But you are never cross; and I will be such an old woman as you are.

Willy. That will do bravely, Rosy—(*fixes her hand in the proper position*). Now, all I ask of you, Rosy, is to take heed not to know me till the old dog jumps up and licks my hand. First, when he comes up smelling, you are to call him away, and bid him not to be troublesome to the gentleman—you must call out "Keeper! Keeper! come hither! come hither, sir!" But the dog knows better; he keeps wagging his tail, and won't go back to you; then he jumps up, and puts his paws on my breast; and you cry, "Down! down!" in a fuss, because of his dirty paws: then he licks my hand.

Rose. And then I may speak, sure? And then I may throw down my spinning-wheel, and cry, "My boy, Willy! my own good grandson, Willy!"

Willy. But stay; we are not come to that yet. Where's the real dog—Keeper! Keeper! Keeper! He'd come to my whistle if he was at the land's end (*whistles*). Keeper! Keeper! Keeper! I'll have him here in a trice—(*Exit whistling*). Sit still, Rosy—stock still.

Dame. But I be sadly afraid, when Willy has him, Keeper will never do his part right.

Rose. Oh! dear dame, if you'd teach him your own self, he could not but learn.

Dame (*shaking her head*). Ah! my child, he's too old to learn; and I do not know how to teach dogs; I had

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rather teach you ten hundred—that is to say, one thousand times over.

Rose. Oh! I wish Willy and his dog would make haste, for I'm tired sitting stock still, waiting for him; and my hand has the cramp, so it has. I wish he would come—do look out for him, Daisy! What have we here?

Enter Jenny Parrot, with bandboxes.

Jenny. Dear heart! pity me! Such a load—so hot up the hill; and such rough road! Haven't walked so much this twel'month, except in Lon'on streets, which is as smooth as my hand.

Dame (*aside*). Rosy, my spectacles, dear; they're on your nose. Who is it?—(*aloud*). Jenny Parrot! welcome, welcome, Jenny—sit ye down.

Jenny (*throws herself into the dame's chair*). I han't a leg to stand upon, I vow and purtest.

Dame. Tired after your journey? 'Tis a long journey enough—when did you get home?

Jenny. Last night *at* tea.

Dame. And we not know till now! Well! if your mother had been alive, she'd have been here to tell me, if it were ten o'clock at night even, that she had come. But I won't scold; you are very good to come at all; for, maybe, you are wanted at home.

Jenny. No no; my young lady sent me here this minute. Besides, as to being wanted, I'm my own mistress, for else I shouldn't condescend to stay with her, for I could have got places enough, and with the quality, in Lon'on. Oh! Lon'on is a fine place! 'Tis a pity you were never there, Mistress Deborah.

Dame. Call me dame, if you be pleased, Jenny Parrot.

Jenny (*speaking very quickly*). Well, Dame Deborah, as I was saying, you've no notion of the fine things I've *seed* since I *seed* you; such loads of fine ladies, and fine gentlemen, and *milliners*, and mantuamakers, and lace, and ribands, and coaches, and fans, and di'monds, and feathers, and flowers, and farces, and balls, and Sadler's Wells, and lions, and bears, and the *Tow'r*, and St. Paul's, and bonnets, and caps, and the king, and the queen, and the princesses, and the wax-work.

Dame. Take breath, Jenny.

Jenny. Breath, forsooth! d'ye think I'm in an asthma?

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Why I could talk ten times as much without ever taking breath, except you put me out. Where was I? Oh, *Mrs. Jane*, says my young lady to me (for nobody, dame, ever calls me any thing but *Mrs. Jane*), we must see every thing, Mrs. Jane, says she. Says I, to be sure, ma'am 'tis so fitting for a young lady like you to see every thing that is to be seen. So hurry skurry went we, dress, dress, dress; rattle, rattle, rattle. Lord! you'll not know my young lady again; every tittle *on* her spick and span new from the top *on* her head to the sole *on* her foot, silk stockings and all flesh coloured! Miss Babberly was always tasty. But how now, children! for your life don't lay your dirty fingers on that there bandbox.

Dame. Their fingers be seldom or never dirty, I will say that for them. But stand back, dears, for you have nothing to do with bandboxes, and I am not sorry for it—no offence.

Jenny. But if you *knewed* what was in that bandbox—but I'm to be mumchance—my young lady's to tell all. Good-by to you, dame, I've not had time to say a word yet, but some other day—some other time—not a *syllabil* am I to say till Miss Babberly comes.

Dame. Miss Babberly! Is she coming here?

Jenny. Ay is she—will be here by-and-by—didn't I tell you so? that was what I came to say. Miss Babberly sent me on to give ye notice, and wouldn't let me stay to finish dressing *on* her out.

Dame. Dressing her out! to come here!

Jenny. No, no; but to go through the village. Folks would stare indeed if she *wan't* dressed *somew'at* extr'ordinary, just come from Lon'on. Well, I'm glad she didn't come along with me, for when she's by there's no getting in a word endways, or edgeways, or anyways, she likes to have all the talk to herself, that's the plague of it. Now I must be going to the bowling-green to tell the Lon'on news, and then to Squire Strut's, for his nurse's maid's my foster-brother's sister, so for old relation's sake must give her a call, and then to Mrs. Blair's, for her housekeeper's brother's son's married to my cousin-german Peggy Patten, you know, so she must have a call. Lord! when one comes from Lon'on, one has so many friends to call upon, and so much to do, and so much to say, one ha' need have a *hundered* heads, and a thousand legs, and a *hundered* thousand tongues, so good-morrow to you, dame, I ha'n't had time to say a word

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to you, but will presently. Children, not a finger on the bandboxes, on your peril! [*Exit Jenny Parrot.*

Dame. Well, if her poor tongue be not tired before night, it will be a wonderful tongue. But I loved talking once upon a time myself, I remember; and we must not expect to find gray heads upon green shoulders, especially when just come from London. Children, dears, let us carry these bandboxes; they will be safer there—

Rose. But you know we must not lay a finger upon them for our lives, dame.

Dame. Then open the door for me, and I will carry them myself; though, to my knowledge, I never carried a bandbox in my life before.

[*Exit dame, carrying a bandbox. Rose, Mary, and children follow.*

Rose. Oh! if the bandbox should open!

Mary. Oh! if it should fall!

Rose. I'm glad I'm not to carry it. I wonder what's in it! [*Exeunt.*

ACT II

SCENE I.—*Edwin, Philip, and Cherry—Edwin writing at a small table.*

Cherry. Make haste! make haste! write very fast, as papa does.

Edwin. When I have finished all these notes, you will fold them up, Cherry, and Philip will seal them.

Cherry. But let me seal some, Philip—only let me press the seal down, will you? I am old enough for that.

Philip. We shall see. Have you written to invite everybody in the village, Edwin?

Cherry. Let us count how many notes are there—one, two, three.

Enter Felix—Edwin rises and comes forward—Philip and Cherry remain at the table folding notes.

Felix. Well, I've called, as you desired, to see the children's theatre.

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Edwin. Thank you; and do you think it will do?

Felix (*whips his boots and sneers*). Why, as to that, if you ask my opinion, as a friend, candidly, I think the thing will be a horrid bore: it will never do, even for the country—take my advice, and give it up.

Philip and Cherry. Give it up! give it up! Oh no, Edwin, don't give it up.

Cherry. I am sure papa and mamma will like it.

Philip. And all the poor children, and Dame Deborah, and everybody, would be so much disappointed. Oh! don't give it up.

Edwin. Perhaps, Felix, you could show me some of the faults, that I might mend them.

Felix (*sarcastically*). 'Pon my honour, I see no faults *that can be mended.* But why did not you take some real play; some of the new plays that have been acted in Lon'on? then we might have had a chance of some fun, instead of all this stupid stuff, about children, and grandmothers, and old nurses.

Edwin. I never saw any of the new plays.

Felix. Never! then how could you, my dear fellow, possibly think of writing any thing in the dramatic line, as they call it.

Edwin. You know, mine is only a little play for children.

Philip. But will you, Felix, who have seen so many of these grand plays that have been acted in London, tell us what sort of things they are?

Felix. Oh, I could not make such children as you understand any thing about them.

Edwin. But perhaps I could understand them. Try, will you?

Felix. Really, I don't remember exactly: I've seen so many, they are jumbled together in my head; and they are so like one another, there's no telling 'em asunder. There's a ****** good character in one—I forget which.

Cherry (*aside to Philip*). Did you hear the word Felix said before *good character?*

Felix. A ****** good character, upon my honour. There's a man that's a buck, and has been a tailor; and he's always saying, *Push on! keep moving! push on! keep moving!*

Edwin. But is that all he says?

Felix. All that I remember. You know, one only remembers the good things.

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Edwin. Well, but I suppose he does something very diverting.

Felix. Yes, that he does. He tears his coat, and his father takes it off to mend it.

Edwin. Upon the stage?

Felix. Yes, upon the stage: for the father was a tailor too, therefore it was quite *in character*—quite natural. So the son stands without his coat; and while he is standing in that condition, a fine lady with a great fortune, whom he is courting, comes pop in upon them; and then he scrambles and shuffles himself into his coat, this way—(*imitates*); and he, or the father tailor, I forget which, sits down upon the needle, and pricks himself; and then all the house clap, and cry, encore! encore!

Edwin. But this is a farce, is not it?

Felix. No, no, it's a comedy: surely I must know, that have been in Lon'on, and have read the playbill. The farce always comes after the play—do you understand? First there is a tragedy, or else a comedy, do ye see; and afterward a farce. Now this did not come afterward, so it could not be a farce, you know; and it could not be a tragedy, because there was no killing, and it ended happily; so it must be a comedy.

Edwin. But are all things that are neither tragedies nor farces, comedies?

Felix. To be sure, what else can they be, unless they are operas; and those are all singing almost.

Edwin. But *all* the new comedies cannot be like this, Felix? What other characters do you remember?

Felix. I don't recollect any in particular; but I know, in general, there is always a dasher, a buck, a dandy; and he must walk *this way*, and stand *this way*, and lounge *this way*; and he must swear and slash about; and he must have a whip or a little stick; and his neck must be made as thick as his body with cravats over his chin—that's his character.

Edwin. His dress, you mean.

Felix. Well, but I tell you, the dress makes the character.

Edwin. Oh, I did not know that.

Felix. For sometimes a man that's dressed in character makes the house roar before he has said a word. Then there must be a fine lady, a flirt, a coquette; and she must be dressed too in the tip, tip, top of the fashion; and she must stare *this way*, or put up her

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glass so; and everybody, 'squires, and baronets, and lords, and all, must be in love with her; I mean if she has a large fortune; and if she has nothing, then some ridiculous, old, old man, hobbling *this way*, must be in love with her, and she must *quiz* him.

Philip. *Quiz* him! what's that?

Felix. Pshaw: I can't explain it—but everybody knows—those that ar'n't in the fashion are *quizzes;* and all poor people, and old people, uncles and aunts, mothers and fathers in wigs, are quizzes, and always are quizzed in the new plays; without them there could be no fun. Why do you look so stupid, child?—(*to Philip*).

Philip. Because I do not understand what you mean by quizzing, and quizzed, and quiz.

Cherry. Look in the dictionary, cannot you, Philip?

Edwin. You will not find it in the dictionary, my dear.

Felix. No, no, because it is a fashionable word. How can you be so stupid, child! it means taking a person in—making them look like fools—making a joke of them.

Philip. But, then, what did you mean by quizzing fathers, and mothers, and uncles, and aunts, and poor people, and old people?

Felix (*with infinite contempt*). Child! I wish you would not pester me with such foolish questions: what can you know of the world, and how can I explain these things to *you?*

Cherry. Come away, Philip, let us mind our business, and seal the notes—I'll light the candle. [*Exit Cherry.*

Felix. Where was I? Oh, besides a fine dashing gentleman, and a fine dashing lady, and some quizzical old people, there must be attorneys and apothecaries, that are always ridiculous; and there must be an Irishman to make blunders, and talk with the brogue; and there must be a Frenchman to talk broken English, and say *dis* and *dat*, and a few words of French—*comme il faut—je ne scais quoi—pardonnez moi—tout au contraire;* and then the scenes must change very often; and there must be some good songs—nonsense songs.

Edwin. What do you mean by nonsense songs?

Felix. Oh, any thing will do, if you sing it well; for instance—(*sings*).

"With a wig-wig-wag;
With a jig-jig-jag;

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With a crick-crick-crack;
With a nick-nick-nack;
With a whack-whack-whack;
On the back-back-back."

Philip. Oh, Felix! but *really!* it is like a little child's song.

Felix. No matter what it is like, it is very much admired—quite the rage.

Re-enter Cherry, with a candle.

But this is nothing to "*The little farthing rushlight.*" Give me that candle, Cherry, and you shall hear it.

[*Felix sings* "*The Little Farthing Rushlight.*"

Philip and Cherry (*laugh*). Oh, Felix! it is impossible that grown-up people can be so very silly.

Felix. Silly! nothing's silly that's the fashion.

Enter a Servant.

Servant. Mr. Edwin, there's a pedler below; he has a load of fine things: toothpick-cases, and pins, and broaches, and watches.

Felix. Who would look at such travelling fellow's trumpery, that has been in Lon'on!

Edwin. We do not want any thing—don't keep the poor man waiting.

Cherry. But, Edwin, let us look at the pretty boxes and things.

Philip. And the watches! Oh, Edwin! let us look at the watches.

Edwin. As we do not intend to buy any thing from this man, we should not *give* him the trouble of opening his pack.

Philip. No; to be sure we should not.

Edwin. Tell him that he need not wait.

Servant. Sir, the poor man fell against a stone, and has cut his leg sadly.

Edwin. Cut his leg! Let us go and see him, perhaps we can do some good—(*Edwin going*).

Cherry. Oh! I know an excellent thing—lint! Dame Deborah said so—Dame Deborah is the best person in the world for lint, when I cut my hand. Oh, Philip! stay for me.

Philip. Come along then, quick.

[*Exeunt Philip and Cherry.*

Felix. Lord! what a fuss about a cut on a pedler's

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shin: why, if it was the king, or my lord mayor himself, they could not run faster. But, poor children, they know nothing of the world—how should they?—(*goes to the table and looks at the notes*). Heyday; what a parcel of notes—invitations to the world and his wife, to see this foolish play. Edwin thinks to have all the village at his beck, I see; and to be lord of the manor, and king over us all! But it sha'n't do—it sha'n't do. He may invite as many people as he pleases; but I'm too sharp for him. His play shall not be acted to-night, that I'm resolved upon. I'll outwit him yet, or my name is not Felix. [*Exit.*

SCENE II.—*The Dame School—Dame Deborah in her great chair, knitting—Enter Miss Babberly.*

Miss B. So, Dame Deborah, are you alive still? Looking, for all the world, just as you used to do before I went to Lon'on.

Dame. Ay, miss, just as I used to do, and I hope, miss, you are the same.

Miss B. (*aside*). *The same!* Has the old trowdledum no eyes?—(*aloud*). Why, Dame Deborah, you must be as old as Paul's, or the Monument, at least; I remember you sitting in that very chair, knitting, ever since I was born. La! how tired you must be; and every one of the old things, and the Bible and all, just the same as before I went to Lon'on. La! how dull you must be; and have you only the old little corner of a garden (*looking out*), that you used to have?

Dame. No more, miss; but I be happy—at your service.

Miss B. Why, how can you be happy with such a little bit of a thing? our town-garden is twenty times as big; and I and papa are always fretting because it is no bigger.

Dame. Ah, Miss! a little thing will make a person happy if they be so inclinable; and all the great things in this mortal world will not do as much if they be not so inclined.

Miss B. Very true, very likely; but I did not come here to be preached to. Pray, did not my maid Jane leave a bandbox here?

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Dame. Ay, she did (*going for the bandbox, and bringing it out*), and here it is, safe, miss. What would you be pleased to have done with it?

Miss B. (*opening it*). In the first and foremost place, dame, you must do something for me.

Dame. Any service in my power, and in reason and right, you may be sure of from me, Miss Babberly; for I loved your mother from the time she was this high, learning her criss-cross row at my knee; she was as sweet a child, God bless her, as—

Miss B. (*interrupting*). Ay, I dare say she was. I wonder they did not send her to a Lon'on school; but that's over now. Look here, Dame Deborah (*opening the bandbox*), look at this elegant silk shawl handkerchief, as good as new; I never wore it, but at my Lady Grimdrum's one night, and once at Vauxhall, and once at Ranelagh, and twice at the play. I don't know what my maid, Mrs. Jane, will say to my giving away so good a thing, which, by right, ought to be hers; but here, dame, take it, and now—

Dame. I ask your pardon, miss, I cannot take it. It would not become me to wear such a fine thing; but I am as much beholden to you as if I took it; and glad, moreover, I am, to see you have so much of your mother's heart, to think, when far away, of a poor old woman.

Miss B. (*aside*). La! how she mistakes; I'm sure I never thought of her when I was away—(*aloud*). Come, come, take this shawl, without more parading or palaver; and throw away this horrid dowdy thing, that looks as if you had worn it these hundred years.

Dame. No, miss, no: with your good leave, I value this, plain serge though it be, above all the shawls, silk or other, that ever can be; for it was made of the spinnings of my dear children, two generations of them; and your own sweet mother had her hand in it. I think I see her now, a-turning that very wheel yonder, under my own eye, for the first time. Pretty soul! God bless her little fingers!

Miss B. (*aside*). She's doting, certainly. She'd talk for ever if I'd let her, I believe.

Dame (*after wiping her eyes*). Well, Miss Babberly, pray be pleased to tell me what I can do to serve you; for 'twill be a satisfaction to me to do any thing, be it ever so little, for your mother's daughter.

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Miss B. What I want, in truth, is little enough—only your old school-benches for to-night.

Dame. Ah! you should be heartily welcome to them, miss, only that I have promised them to Master Edwin for to-night: 'tis his father's birthday, and he has made a little play for our young folks to act; and all the village, and even old I, reckon to be at the bowling-green this night, by six o'clock.

Miss B. Well, well, I know all that; but my brother Felix and I have a scheme of our own, and we must have the benches, do you understand? and we'll show your young folks how to do something better worth seeing by all the village than this nonsensical play of Master Edwin's, as you call him. What can he know of plays—he that has never been in Lon'on?

Dame. Indeed, Miss Babberly, I cannot say as to that: but this I know, that I have promised him my benches.

Miss B. Pooh! what signifies your promise?

Dame. My promise! what signifies it, miss! Poor as I am, *my* promise is as much to me—as much, ay, as mountains of shawls would be to you, Miss Babberly.

Miss B. La! how the woman talks.

Dame. Though I be *nobody*, I would not break my promise, look you, for anybody upon earth, miss: not for the queen's majesty, if so be she were to come down from her throne in her royal robes, and crown upon her head, to this poor cottage, and say to me, Dame Deborah, break your word for me, and I'll make you a dutchess: I would make answer—No, please your queenship, I have a soul to be saved as well as your majesty's ladyship; and as to being a dutchess here upon earth, I reckon to be soon an angel in heaven.

Miss B. You an angel! you look wondrous like one, indeed! you must alter greatly before you are an angel.

Dame. True, Miss Babberly; and great alterations do come to pass in a short time, as we see in people even here upon earth.

Miss B. So the short and the long of it is, that you won't lend us your old benches.

Dame. I cannot, miss, having promised to lend them to another.

Miss B. La! you could make an excuse, if you had but a mind. Could not you say that you did not know we was to come home; and that you'd promised them first, long ago, to me?

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Dame. Would not that be a lie, miss?

Miss B. Dear me, no; that's only called an excuse in Lon'on.

Dame. I never was in Lon'on, miss—(*aside*); and wish you had never been there neither, if this is all the good you've learned by it.

Miss B. Keep your old benches to yourself then; I'll be bound we'll do as well without them; and, I'll answer for it, I'll get your *little dears* to do what we want in spite of you.

Dame. It will not be in spite of me, if it be any thing right that you want of them; and in spite of you—no offence meant, Miss Babberly—they will not do any thing that's wrong.

Miss B. Right or wrong, I'll make them do whatever I choose—(*Dame shakes her head*). That is, when you are not by to shake your head at them, and frighten them out of their wits.

Dame. As to that, they ben't a bit afraid of *me*, miss; 'tis only of doing wrong they be taught to be afraid; I will not say a word to them, one way or other, but just stand by, this way; and do you ask them, Miss Babberly, what you please: if it be right, they'll say, yes: if wrong (*striking her stick on the ground*), they'll say, no!

Miss B. (*softening her voice*). Oh, come, come, Dame Deborah, don't be so stiff and cross, but do you get them to do what I want. I only just want these children to give up acting this foolish play of Edwin's; and my brother and I will show them how to act a much better.

Dame. Oh! surely, Miss Babberly, you would not ask them to do such an illnatured thing by poor Mr. Edwin, when he has taken such pains to get this little play ready for his father's birthday.

Miss B. He was very illnatured to me; he did not dance with me this time last year at the ball; and one bad turn deserves another.

Dame. And can you, Miss Babberly, remember to bear malice a whole year? No, no, take my advice.

Miss B. I don't want any advice—I hate advice—all I ask of you is to let me see the children—where are they?

Dame. They be out in the field hard by; but, if I ring this little bell, they will be here in a trice.

Miss B. Ring it then—ring it directly.

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Dame. Ah! my dear Miss Babberly, *do-ye'* think a bit, and you'll not go to do a spiteful thing, and you'll not go to spoil all the sport of these innocent little ones, and breed ill-will, especially on this happy day—(*Dame Deborah lays her hand affectionately on Miss Babberly's arm*). Ah! my dear miss, think a bit, think a bit, *do-ye'!* pray!

Miss B. (*shaking her off*). I have thought long enough, and I hate thinking. Ring! ring! that's all I want of you: ring, ring, and no more preaching—if you won't ring, *I* will.

[*The dame sighs, and leans on her stick—Miss Babberly snatches the bell and rings.*

SCENE III.—*Enter the children—Miss Babberly, taking artificial flowers out of a bandbox.*

Miss B. Come, children! I want you to do something for me. Look at these beautiful things, just fresh from Lon'on. I'll give you these if you'll do what I want.

All the children exclaim, How pretty! how pretty!

Nancy. How like a real lilach!—I should like to have that pretty bunch of laburnums.

Mary. And these roses—oh! how pretty they are; but they have no smell. I would much rather have the real sweet roses in our dame's garden.

Miss B. But real roses wither in a minute. Now, you may stick these artificial flowers in your bonnet, and they will last for ever. Don't they look pretty this way?—(*placing them in Mary's hat*).

Hannah (*laughing*). They look very odd, Mary, in your old hat. I don't think they are suited to us poor children.

Miss B. Very likely—yet they are quite the fashion, I assure you.

Rose. But we know nothing of fashion—we care nothing for fashion!

Miss B. (*aside*). They are the most stupid countrified creatures I ever saw—(*aloud*). But only consider, Mary, how this becomes you?

Mary. Indeed, miss, I thank you kindly, but I do not think it would become me at all to wear such things—would it, dame?

[*Dame Deborah puts her finger on her lips, and is silent*

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Miss B. But, Hannah, this necklace; would not you like to have this?

Hannah. No, miss, I am obliged to you, I have no wish for it; I have no use for it.

Rose. Would you be pleased to tell us at once, miss, what it is that you want us to do for you? because, if we can do it we will, without any presents.

Miss B. Why! I only want you to give up acting this foolish thing for Mr. Edwin, and my brother Felix and I will show you how to do an *impromptu* of our own invention; then you will have nothing to get by heart, and will have an elegant supper ready for you after it's over; and sweetmeats of all sorts; and *everybody*, that is, all the company we have in our house from Lon'on, will admire you.

Mary (*to Rose, aside*). Sweetmeats of all sorts! do you hear that?

Hannah (*aside*). Oh! I should like sweetmeats very much.

Miss B. (*aside*). Ha! ha! I see the sweetmeats will do the business.

Rose (*aside to Mary*). But, then, I would not break my word for sweetmeats—would you, Mary?

Mary (*aside to Rose*). No, to be sure.

Hannah (*aside to Mary and Rose*). No, no, we must not do that.

Rose (*aside to Mary and Hannah*). Besides, Mr. Edwin is always so good to us.

Miss B. Well, children, do you intend to keep me here all day—yes or no?

Rose. No, thank you, miss; we are much obliged to you; but we cannot break our promise, you know, with Mr. Edwin.

Miss B. Speak for yourself only, if you please, Miss Pert; do not say *we*, for I dare say there are many here who are not of your mind.

The children all exclaim, No! no! not one! Rose has said what we all thought.

Dame. This is just what I expected from you, my dear children—(*she goes to kiss them*). I told Miss Babberly so: I advised her—

Miss B. Don't talk of advising me, you preaching old woman!—(*pushes the crutch from under Dame Deborah as she stoops, and throws her down*).

Children exclaim, She pushed our dame down!

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[*Some of them help the dame up, while Mary catches hold of Miss Babberly's hands, and Rose throws Miss Babberly's shawl over the young lady, and winds it round her while she struggles and screams.*

Dame. My dears, what are you about? she could not mean to do me any harm.

Rose. Oh, yes, she did, she did; and now we have her hands safe.

Miss B. Impertinence! insolence! children! brats! let me go! you shall be all put in jail—papa will put you all in the pillory for this—if you don't let me loose this minute.

Rose. Not till you have asked our dame's pardon.

Miss B. (*struggles in vain, crying loudly*). Let me loose! let me loose, children!

Dame. My dears, this must not be. I will let you loose, miss, if you will only be still—(*she unwinds the shawl, and sets Miss Babberly at liberty*). You know, my dear children, we should return good for evil.

Miss B. You shall all suffer for this, I promise you.

[*Exit Miss Babberly.*

Rose. Miss Babberly, you have left your bandbox.

Dame. Run after her with it, Rosy, and carry it to her house. Pray be civil, my child. You will find me, when you come back, sitting out under the great tree in the meadow, hearing these little ones their parts; and do you come and say yours, do you mind me, Rose?

[*Exeunt.*

SCENE IV.—*A room, ornamented with boughs, and garlands, and flowers—Edwin, Philip, and Cherry.*

Philip (*on the top of a step-ladder*). Oh! I am very glad Edwin likes our work.

Cherry (*clapping her hands*). So am I! so am I!

Philip. Edwin, will you be so kind as to hang up these garlands for me, for I cannot reach quite high enough. Edwin, do you think my father will like it?

Cherry. Edwin, do you think mamma will like it? and shall we bring papa in before dinner, or wait till tea-time? Do you think the smell of the flowers is too strong?—I don't know what people mean by the smell of flowers being too strong for them—Edwin, do you?

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—Edwin, do you like the smell of honeysuckles or roses best? and do you like these dog-roses?

Edwin. Which of the six questions that you have asked me, Cherry, shall I answer first?

[*Edwin is busy putting up the garlands.*

Philip. My dear Cherry, six questions! that is really too much. Now, Edwin, don't you think we had better ask mamma to have the tea-table here, that we may drink tea before we go to the play? Oh! my dear Edwin, have the children their parts quite perfect? Do you think Rosy will act the old grandmother well? Does Dame Deborah come? I hope she will—I love Dame Deborah. Does not Willy play the sailor admirably well? and do not the trousers fit him very well?

Cherry. Six! there, Philip, you have asked six questions your own self, and without ever waiting for an—My goodness! Look, Philip! Edwin! Edwin! look what comes here!

Enter Willy, his hair and clothes wet—he is followed by a dog as wet as himself, and who has one of his legs tied up.

Edwin. What is the matter, Willy? you look as if you had been half drowned.

Willy. So I have, master; but no matter for that; I think very little o' that; I think more o' my dog. If he had but ha' let my dog alone, I should not ha' minded the rest a straw; but he—

Edwin. He—who?

Cherry. Who? who do you mean by he?

Philip. Felix! he must mean Felix! there is nobody else in the world could be illnatured enough to do such a thing.

Edwin. But let us hear what he has done, for we have heard nothing yet.

Willy. Why, master, I had been ever so long looking for my dog, who was wanted to rehearse his part in the play along with the rest, as he was very well able to do; and just when I had found him, and as we were coming along the path together by the water-side, who should we meet but Mr. Felix; so, not having seen *he* since he came from Lon'on town, I takes off my hat, and asks him how he does, as civil as needs be, and was then passing on in haste—"Where, now? in such a hurry," says he, standing across my way. So, in as few words as might be, I told him all about your play,

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Mr. Edwin. "Give up this here nonsensical play," says he, "and I'll show you how to do something better." "Give it up! no, that I won't," says I; "and as to showing us something better, I doubt if you could, sir," says I: on this, he used some uncivil words about you, Master Edwin; which I, not thinking myself bound to bear, made answer in my turn, that you were as good as he, and better, and cleverer too, though so be you had not been to Lon'on. "Say that again," says he, "and I'll give you as good a ducking as ever you had in your life." So I said it again, and he shoved me into the river, I not thinking he would do such a thing; for if I had, I would have stood this way, and defied him, so I would; but not being on my guard, souse I went, and my dog after me. Well! I should not have minded all, only Mr. Felix had the malice to throw a stone at my Keeper as he was scrambling up the bank; and his poor leg is so hurt he can't walk on it; and so he can't do his part to-night in the play, which is what grieves me more than all, because he had it so pat, and I had taken such a world of pains to teach him: not but what he learned as fast as a dog could learn. Poor fellow! poor fellow!

Philip. Poor fellow! Cherry, let us go and ask mamma to give us something for him to eat.

Edwin. And come with me, Willy, that I may get you dried, and give you some clean clothes.

Willy. Oh no, thank you, master, I did not come here to beg for clothes; and as to being wet, I don't mind it a farthing; and as I was in a good cause, I don't think it a shame to be ducked. I did not come here to beg for pity, do you see: but, Master Edwin, you *could* do me a great favour.

Edwin. What is it? Whatever it is, if I can do it, I will.

Willy. Don't say that before you know what it is, for fear you should repent afterward.

Edwin. No, I am not in the least afraid of that: speak—tell me what it is I can do for you.

Willy. Why, master, I heard say that the king's birthday could be put off; now, if your father's birthday could be put off for a few days, just till my dog's leg is well enough for him to act; for without him it will be nothing: no, I won't say that; but all the pleasure to me would be lost: all! no, I don't say all. In short, I don't know how to ask such a thing; but I do wish the play could be put off till Keeper's leg is well.

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Edwin. It shall be put off—you need say no more; I will go to my father this moment, and tell him what has happened. I promised you, Willy, that I would do any thing you asked me, and to be sure I keep my word. Now go home, and take off your wet clothes; and all I ask of you is, that you will forgive Felix, and let us have no quarrels in our village.

Willy. I'll forgive him, and I'll never say a word more about it. [*Exit Edwin.*

Willy (*solus*). Well! I am very, very much obliged to Master Edwin for putting off the play till my poor dog's leg is well: more obliged than if he had given me ever so many coats and hats. *That* is really good-natured of him, and I love him for it: but he is always so—he never thinks of himself when he can do a kind thing by another.

Enter Cherry and Philip, with a plate of meat for the dog.

Philip. So the play is put off!

Cherry. So the play is put off!

Philip. Let us give poor Keeper the meat at any rate —it is not his fault.

Cherry. No, it is Felix's fault. Here, Keeper! Keeper! [*They feed the dog.*

Philip. Willy, you must go home directly, and take off your wet clothes; Edwin bid me not let you stay. It is not very civil, I know, to turn you out of the house; but it is for your good.

Willy. That I am sure it is, when Master Edwin desired it—a good morning to you! and thank you for being so kind to Keeper. Come along, poor fellow! poor fellow! come along; I won't walk too fast for you.

[*Exit Willy.*

Cherry. Oh! my dear Philip, are not you sorry that poor Edwin's play is not to be acted to-night!

Philip. Very, *very* sorry, indeed! but as soon as Keeper gets well, it will be acted. I will tell you what, Cherry, as my father's birthday is to be put off, we should take down all these flowers, and wait till the day when Edwin's play is to be acted, before we show my father our bower.

Cherry. What! pull down all our work—all our beautiful garlands—all we have been doing since five o'clock this morning—all our bower—all!

Philip. Yes, all! because it would be good-natured to

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Edwin to keep it all for the day when he has his play. Oh, Cherry, my dear! let us be good-natured to Edwin, who is so good to us, and to everybody.

Cherry. Well, do—pull it all down then; and when you have done, tell me, and—I will look up.

[*Cherry sits down and hides her face with her hands —Philip tears down the branches and flowers.*

Philip. Look up, Cherry; it is all down.

Cherry. All down!—(*after a pause*). I will help you to carry the flowers away. It is a great pity!

Philip. But we can make it as pretty again another day. Come, help me to drag these great boughs.

[*Exeunt, dragging off the boughs.*

ACT III.

SCENE I.—*Felix and Miss Babberly.*

Miss B. To be insulted in this manner by a parcel of beggarly brats, and an obstinate old woman!

Felix. But what provokes me is, that this Edwin has become quite king of the village; and nothing is to be done contrary to his will and pleasure; and what a rout about *his* father's birthday, and his own nonsensical play. I gave a little rascal and his dog one good ducking, however, for talking to me about it. Edwin is so cursedly conceited too; for I was giving him an account of the Lon'on plays, and he did not seem to admire them at all.

Miss B. Admire them! no; he admires nothing but himself. He told somebody, who told Jenny Parrot, who told me, that he did not see any thing to be admired in *me*—the quiz!

Felix. Quiz, indeed! you'll see how finely I'll quiz him before this day's over. This foolish play of his shall not be acted, I promise him: and all the people whom he has invited shall stand staring at one another, like a parcel of fools; and he, fool in the middle.

Miss B. But how? how?

Felix. Oh, leave that to me—I have contrived it all. Look at this key—this is the key of the summer-house in the bowling-green, where they have their famous

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theatre. It was lying on the table at the porter's lodge just now, when I was there: and a bright thought came into my head at the moment; so I put an old key, which is just the same size, in its place, and no one will perceive the difference till night; and then, just when the company, and the actors, and actresses, and Mr. Manager, and all, want the key, they will stand staring at one another, and at last will be forced to go home like fools as they are, for not one of 'em would have the spirit to break open a gentleman's door. Oh! they'll be finely quizzed.

Miss B. Excellent! excellent! and those impertinent children will be punished just as they ought for their insolence to me. Did you ever, in all your life, hear of any thing so impertinent, as their tying me up in my own scarf!

Felix. What! did they tie you up quite tight, Bab!

Miss B. Quite tight.

Felix. With your arms *in*, close to your sides.

Miss B. Yes, just so.

Felix. Capital! you must have looked exactly like a mummy, Bab; I wish I'd seen you. [*Laughs loud.*

Miss B. Mummy! indeed! Brother, I wish you wouldn't laugh so, like a horse.

Felix. Horse! Indeed, Miss Bab. Let me tell you, miss—

Enter Edwin.

Edwin. I hope I don't interrupt you.

Felix. No; we were only—only—

Miss B. Not at all, sir; we were only—

[*Miss Babberly makes him a scornful, awkward half-courtesy, half-bow.*

Edwin. I am come to tell you, Felix, that we have given up all intention of acting my play to-night.

Felix. Really!—(*aside*). Then I can't quiz him; how provoking.

Miss B. Then I suppose we can have Dame Deborah's benches.

Edwin. Not to-night. Miss Babberly will not ask for them, I am sure, because the children and the people of the village will want them; for, instead of the play, they are to have a little dance.

Miss B. Dance! and where will you get beaux!

Edwin. We shall not want beaux, for we shall have

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no belles. Felix told me that all your family have company at home.

Felix. But, pray, how *could* you give up your play?

Edwin. Very easily; I would give up any thing to avoid disputes.

Felix. Disputes! why, I thought you had every thing your own way in this place. I thought you were Lord Paramount here.

Miss B. Yes; I thought you had partisans enough here, sir.

Edwin. Far from wishing to have partisans, or to be the cause of quarrel, I am ready to give up my own schemes, you see. We are all very happy in this village, and do let us continue to be so; let us all be good friends.

Felix. To be sure—certainly—I have no objection. But I really do not see exactly what you would be at: disputes! quarrels! what do you mean?

Edwin. What do I mean, Felix? You cannot have forgotten poor little Willy and his dog.

Felix (*embarrassed*). As to that, I remember the little scoundrel was impertinent to me, and I gave him and his dog a ducking, that's all.

Edwin. And nearly broke the dog's leg. Was Willy impertinent? I did not understand that.

Felix. Well, no matter how it was; if he put me in a passion, he must take the consequences. Mr. Edwin, you always take the part of every vulgar fellow against me; and, let me tell you, sir, I do not think this very genteel conduct.

Miss B. And I assure you, sir, if you expect me to be at your dance this evening, I have the pleasure to assure you that you will be disappointed.

[*Exit Miss Babberly, tossing her head.*

Felix. That's right, sister; there's a girl of spirit!

Edwin. I shall never think you a boy of spirit, after what I have now heard and seen. [*Exit Edwin.*

Felix (*going out at the opposite door*). I'll make you repent of this before the sun goes down. [*Exit.*

SCENE II.—*Philip and Cherry at their own house, with a large basket of strawberries and a bowl of cream.*

Cherry. After joy comes sorrow; after sorrow comes joy. Though we did pull down our garlands, and though

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we did give up Edwin's play, we shall be very happy to-night; and we shall make all the children at the dame's so happy with these strawberries and cream! Was not mamma very good to let us gather so many, and to give us such a great quantity of nice cream?

Philip. Yes; but I am thinking how we can carry it without spilling it, as far as the Dame School.

Cherry. As the milkmaids do: put it on my head, and you shall see how well I can carry it.

Philip. No, no, I will carry it; for I am better able than you, and stronger, and wiser.

[*He tries to carry the bowl on his head.*

Cherry. My dear! my dear! it is spilling in spite of all your strength and wisdom: besides, boys are never milkmaids.

Philip. But you know it is the part of a woman not to dispute about trifles with a man.

Cherry. Well, I will not dispute: now give it me—(*meekly, and putting her hands before her*). Pray!

Philip. So I will, because you are so gentle and good-humoured: besides, I know it is the part of a man to give up to a woman if she does not dispute—(*places the bowl on her head*). Only don't tumble down, that's all I ask of you.

Cherry. Tumble, my dear! look how steadily I carry it [*Exeunt.*

SCENE III.—*Mr. Babberly's House—Miss Babberly and Felix.*

Miss B. Do you know, I've been explaining to papa all about the behaviour of Dame Deborah, and her rudeness about the benches; and telling him what a party there is made against us here in the village: and he says he can punish that old beldam, and have her benches in spite of her, and this very night too.

Felix. This night, can he? I'm glad of that, for it will humble Edwin's pride. She and all those stupid children are his partisans, and under his protection, I see; and he is always doing things to make himself popular. You see, that though the play is given up, he will give them a dance to-night. The pedler who cut his leg, and who stays at their house, can play on the fiddle, and

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he will be their music. And I saw the children carrying such baskets of strawberries, and bowls of cream. They are determined to keep their father's birthday, it seems, to provoke us; but maybe we shall be too many for them yet.

Miss B. My father will manage that for you.

Felix. Manage that! How! how! Oh, tell me how!

Miss B. I will tell you how he will manage it: Dame Deborah is *his* tenant—she forgets *that;* and she forgets that she hasn't paid her rent, nor can't, he says, for her cow has just died; and so he'll send Bateman the bailiff down to seize all she has, this very evening, and the benches first and foremost.

Felix. Joe, triumph! Joe, triumph!

Miss B. Come, you'll hear him giving orders this minute. [*Exeunt.*

SCENE IV.—*A meadow near Dame Deborah's cottage—Dame Deborah setting out a table with a large bowl of cream, and children with baskets of strawberries—Cherry and Philip distributing the strawberries—Edwin sets the benches to the table—the pedler tuning his fiddle.*

Philip. Now everybody has strawberries.

Cherry. And let everybody pick for themselves.

[*The children begin eating.*

Edwin. But, Philip, you have forgot your poor fiddler here; is not he to have any?

Philip. He shall have half of mine.

Cherry. And half of mine.

[*They give him a plate of strawberries.*

Philip. I will put your fiddle out of your way, for we shall be an hour before we are ready for it. Picking strawberries is a serious affair.

Edwin. But, then, consider that Dame Deborah came out on purpose to see you all dance; and if you are so long before you begin, the sun will set, and it will be too late for her to stay out.

Dame. Never mind me, dears—please yourselves, and never mind *me.*

Rose. Oh, yes, but we *will* mind you: We can't please ourselves without minding you. Let us dance before we eat our strawberries, that we may not keep our dam out in the night dew.

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Omnes. Yes, yes, yes.

[*They push away their strawberries, and all rise and get ready to dance.*

Pedler. What tune shall I play, master?—(*to Edwin*).

Edwin. Rural Felicity.

[*He plays "Rural Felicity," and the children dance —While they are dancing, enter Felix with the bailiff—Miss Babberly follows.*

Dame. What comes here? what is all this?

Miss B. All this is what you've brought on yourself, old woman, by your stubbornness.

Felix. Bateman, do your duty—there are the benches.

Miss B. Ay; if you had lent them to us by fair means, it would have been better for you.

Bateman (*pushing by Edwin*). By your leave, sir! By your leave, dame!—(*takes hold of the end of the bench on which Dame Deborah is sitting*). My orders be, to seize all this household furniture here, for rent and arrears, due to J. Babberly, Esq.

Dame. What, all my little goods! all!—and all on such a night as this!

[*She clasps her hands in an agony—the children gather round her in consternation.*

Philip (*to Felix*). You cruel creature!

Cherry. Poor Dame Deborah!—poor good Dame Deborah!

Rose. Oh! what *can* we do for her?

Nancy. Oh! is there any thing *we* can do for her?

Mary. I never saw her cry before.

[*Dame wipes her eyes.*

Dame. God's will be done!—God's will be done! He has left me these—(*she stoops and kisses the children*). Don't cry, dears—don't *you* cry, or I can't help it. Well, sir (*to the bailiff*), as Mr. Felix says, do your duty.

Edwin (*springing forward*). Stop, stop!—how much is the debt?

Bateman. Seven guineas.

Edwin. I have only four: but here is my watch, it is worth—

Felix (*interrupting*). No matter what it is worth, it won't do; the rent is to be paid in money; I heard my father read the lease: and *ready-money is* the words mentioned in the lease. Bateman, carry off the benches.

The Pedler (*coming forward*). Master Edwin, if you want ready-money, if you be pleased, I can let you have it.

[*Gives guineas.*

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Edwin. Thank you, my good friend. Take my watch.

Pedler. No, master, no; I'll not take the watch—I'll take your word—that is enough.

Edwin. Mr. Felix Babberly, here is the whole of what is due to you, or to your father, in *ready-money.* Now, let go this bench, if you please.

Felix. Very well, sir: vastly well, sir; I will be revenged some time or other, you'll see.

Miss B. Yes, yes, you have not done with us yet, I promise you. But go on with your vulgar diversions, and welcome; and be assured, we don't want to be of the party. It is not such dancing as this, and such parties as these, we have been used to in Lon'on, I can tell you; and I will make papa live in Lon'on. Come away, brother Felix. [*Exit Miss Babberly.*

Felix (*aside*). So! they will have their dance, and be happy in spite of us! How provoking! [*Exit Felix.*

Cherry. How excessively ugly he looked!

Philip. Yes; people always look ugly when they are in a passion.

Dame. Handsome is that handsome does—(*turning to Edwin*). Mr. Edwin, how shall I thank you?—But your own good heart thanks you enough.

Willy. Yes, that it does, I'll answer for it. See how happy he looks!

Edwin. What a pity that Felix cannot be as happy—

Dame. As good, you mean?

Philip. Oh, let us think no more of Felix. It is very disagreeable to think of bad people.

Cherry. Especially on papa's birthday: so let us go on dancing.

[*Cherry and the rest of the children join hands; and she sings as they dance.*

"Come, follow, follow me,
Ye fairy elves that be;
Light tripping o'er the green,
Come follow Mab your queen."
&c. &c

[*Exeunt.*

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